Experimental Analysis on Concentrated Photovoltaic Solar Panel

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ABSTRACT

In recent years, renewable energy such as solar and wind energy is being used abundantly. Concentrated photovoltaic (CPV) modules ensure a more effective and greater power output than the conventional photovoltaic (PV) solar panel.

The motivation of this research project was to design and construct a dual axis solar tracker to compare the power output of a conventional PV panel to a two-stage CPV panel. CPV solar panel is studied to achieve the maximum output and performance compared to the traditional PV panel. This work is centered on the investigation CPV and PV output energy.

A dual axis solar tracker was designed to implement a two-stage CPV solar panel and a PV panel on it at the same time. A two-stage CPV solar panel consists of one linear Fresnel lens as a primary lens and a solar prism as a secondary lens, in order to concentrate the solar irradiance to gain more power output. The designed dual axis tracker includes a dc motor, a dual axis solar tracker controller, and a linear actuator, to track the plate regarding the elevation angle and azimuth angle.

6 months of data has been collected since January 2018. In this study, we were collecting global solar radiation, direct solar radiation, diffuse solar radiation, CPV produced energy, PV produced energy, elevation angle, and azimuth angle on an hourly basis.

The data shows that the output power of the CPV panel is mostly related to the direct solar radiation. Therefore, when direct solar radiation is more than diffuse solar radiation, the output power of the CPV panel is more than the conventional PV panel. In contrast, when diffuse solar radiation is more than direct solar radiation, the output power of the PV panel is more than CPV panel. In contrast, since the diffuse radiation effects on PV panels more than CPV panels, when diffuse solar radiation is more than direct solar radiation, the output power of the PV panel is more than CPV panel.

Keywords: Photovoltaic solar panel, Concentrated photovoltaic, Dual axis solar tracker, Fresnel lens, Solar prism.

ÖZ

Son yıllarda güneş ve rüzgar enerjisi gibi yenilenebilir enerji bolca kullanılmaktadır. Konsantre fotovoltaik (CPV) modüller, geleneksel fotovoltaik (PV) güneş panelinden daha etkili ve daha büyük bir güç çıkışı sağlar.

Bu araştırma projesinin motivasyonu, geleneksel bir PV panelinin güç çıkışını iki aşamalı bir CPV paneliyle karşılaştırmak için bir çift eksenli solar izleyici tasarlayıp inşa etmekti. CPV güneş paneli, geleneksel PV paneline kıyasla maksimum çıktı ve performansa ulaşmak için çalışılmaktadır. Bu çalışma, araştırma CPV ve PV çıkış enerjisi üzerinde yoğunlaşmıştır.

Çift eksenli bir güneş takip cihazı, aynı anda iki aşamalı bir CPV güneş paneli ve bir PV paneli uygulamak üzere tasarlanmıştır. İki aşamalı bir CPV güneş paneli, daha fazla güç çıkışı elde etmek için güneş ışınımını yoğunlaştırmak amacıyla bir birincil mercek olarak bir doğrusal Fresnel mercek ve ikincil bir mercek olarak bir solar prizmadan oluşur. Tasarlanan çift eksenli izleyici, bir dümen motorunu, bir çift eksenli solar izleyici kontrolörünü ve yükseklik açısına ve azimut açısına göre plakayı izlemek için bir lineer aktüatör içerir.

Ocak 2018'den bu yana 6 aylık veri toplanmıştır. Bu çalışmada, küresel güneş radyasyonu, doğrudan güneş radyasyonu, yaygın güneş radyasyonu, CPV üretilen enerji, PV üretilen enerji, yükseklik açısı ve azimut açısı saat bazında toplanmıştır.

Veriler, CPV panelinin çıkış gücünün çoğunlukla doğrudan güneş ışınımına bağlı olduğunu göstermektedir. Bu nedenle, doğrudan güneş ışınımı yaygın güneş ışınımından daha fazla olduğunda, CPV panelinin çıkış gücü geleneksel PV panelinden daha fazladır. Aksine, yaygın güneş ışınımı doğrudan güneş ışınımından daha fazla olduğunda, PV panelinin çıkış gücü CPV panelinden daha fazladır. Aksine, PV radyasyonları PV panelleri üzerindeki etkisi CPV panellerinden daha fazla olduğundan, yaygın güneş radyasyonu doğrudan güneş ışınımından daha fazlayken, PV panelinin çıkış gücü CPV panelinden daha fazladır.

Anahtar Kelimeler: Fotovoltaik güneş paneli, Konsantre fotovoltaik, Çift eksenli solar izleyici, Fresnellens, Güneş prizması.

To my parents

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LIST OF ABBREVIATIONS

AC	Alternating Current
AM	Air Mass
CFC	Compound Flat Concentrator
CPC	Compound Parabolic Concentrator
CPV	Concentrated Photovoltaic
CSP	Concentrating Solar Power
CSR	Circumsolar Ratio
CTP	Concentrated Thermal Power
CTS	Camera Tracking Sensor
DAQ	Data Acquisition System
DC	Direct Current
DNI	Direct Normal Irradiation
HCPV	High Concentration Photovoltaic System
LCOE	Levelized Cost of Energy
LCPV	Low Concentration Photovoltaic System
LFR	Linear Fresnel Lens
MJSC	Multi-Junction Solar Cell
MPPT	Maximum Power Point Tracking
PMMA	Polymethyl Methacrylate
PV	Photovoltaic
PVT	Photovoltaic Thermal hybrid

Chapter 1

INTRODUCTION

1.1 Background

The worldwide population is growing; therefore, it is necessary to use the renewable resources such as solar energy, wind energy, biomass energy, and hydropower. As the conventional energy sources such as fossil fuel sources are getting scarce, it is evident that more energy should be generated by renewable energy like solar energy. The development of photovoltaic (PV) cell efficiency and advancement in its manufacturing technology reduce the expenses.

The interest in the renewable energy source is increasing rapidly, therefore the development of renewable resources will continue. As it has been claimed in [1], the generation capacity that is afforded by solar photovoltaics and concentrating solar power (CSP) are almost 227 GW and 4.8 TW respectively.

As the sun's position is changing during the day, the photovoltaic system must be set perpendicularly to the solar radiation in order to obtain the maximum possible energy [2]. The position of the sun can be described as vectors denoted with an altitude and an azimuth angle [3]. The azimuth angle is the angle in the horizontal plane to the horizontal projection of the solar radiation. Meanwhile, altitude angle can be represented as the angle between the horizontal plane of the location and at a point on the Earth's surface as default line connecting the point on the earth and the sun [4]

The altitude and azimuth angle of each place is individual. The following figures show the solar characteristics of Famagusta, North Cyprus from SunEarthTools website [5].

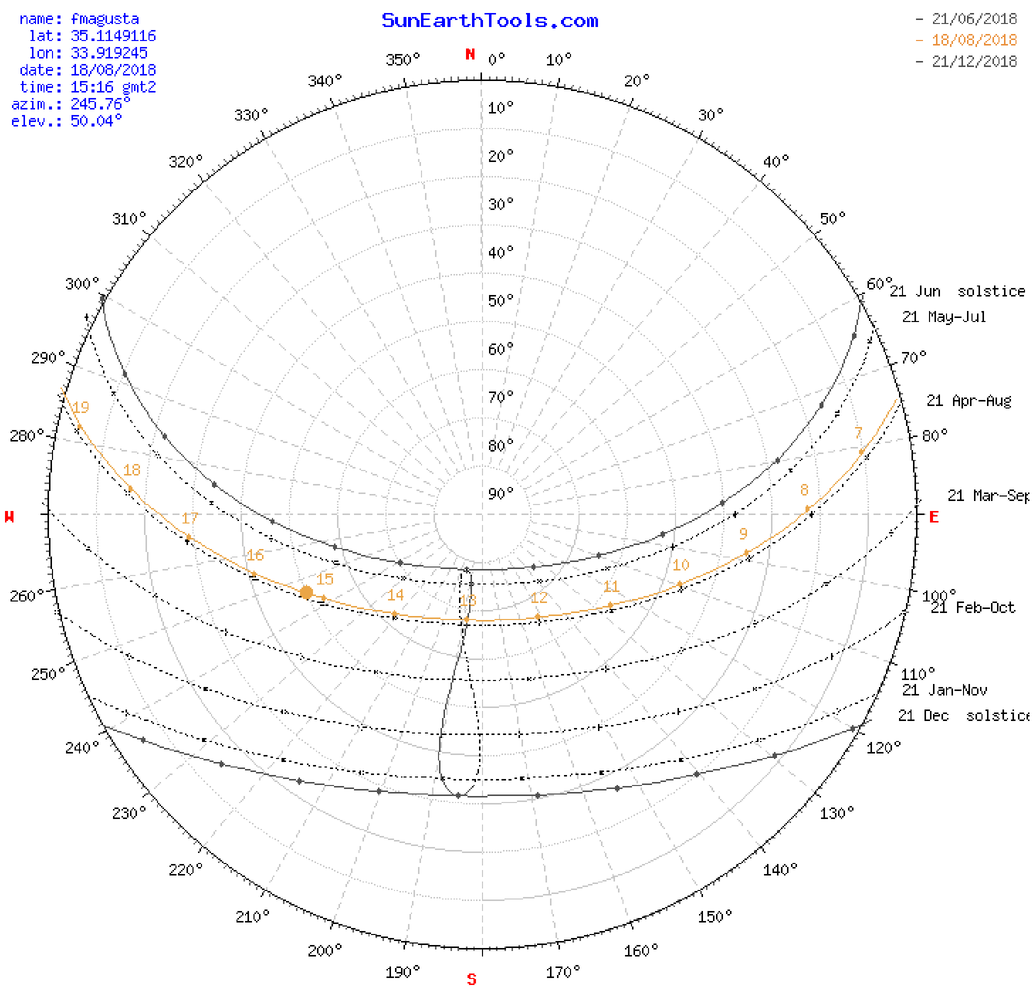


Figure 1: Chart polar of the Famagusta

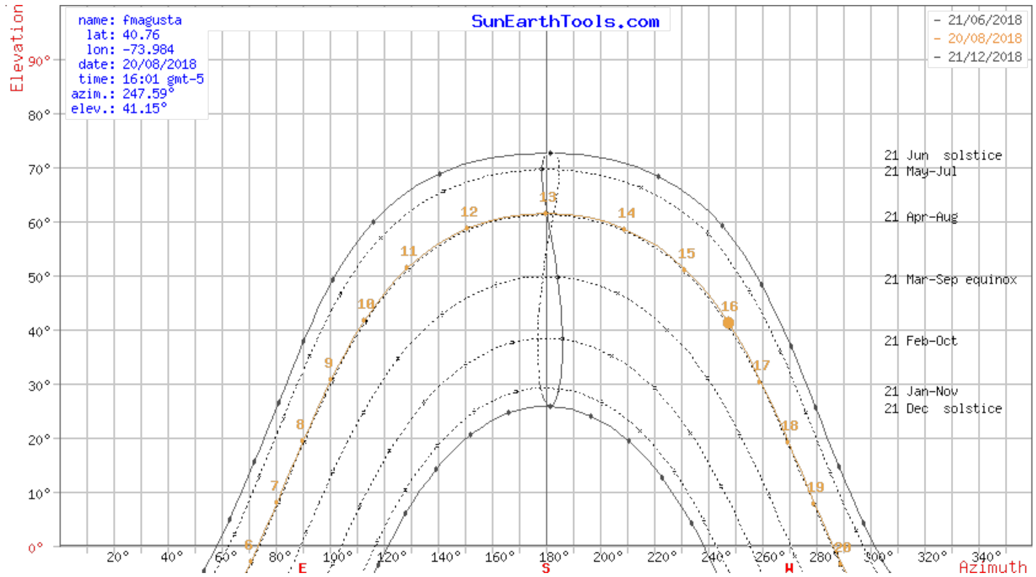


Figure 2: Chart Cartesian of Famagusta

The value of elevation (tilt) angle and azimuth angle are important in PV panel's installation process. Moreover, the latitude angle of the location is significant. For instance, the optimum tilt angle of a fixed PV panel is related to the latitude angle and azimuth angle of the location [6].

Nevertheless, the main shortcoming of PV systems is their low efficiency. As a result, many clarifications are introduced such as using the different material of semiconductor and implementing maximum power point tracking (MPPT). Moreover, since a solar cell is a two-level device that only converts definitely the photons with energy close to the energy separation of these levels that is called band gap [7], the efficiency of the present solar cells is bound by theoretical fundamental reason [8].

The highest accomplishment in conversion efficiency has been attained by using photovoltaic multijunction solar cell (MJSC) [9, 10]. The reported efficiency has increased over 46% for the III-V semiconductors multijunction solar cell [11]. In order to have high efficiency in a CPV, the solar radiation should be orthogonal to the CPV cell. Accordingly, implementing the dual axes solar tracking seems essential.

However, the main motivating force in creating the concentrator is to reduce the consumption of the semiconductor material [12]. This is the reason why it is necessary to concentrate the materials as concentrator solar cell. It is feasible to implement a concentrator solar energy in three methods i.e. refraction, reflection, and hybrid. By using the refraction type, the irradiance pass through the lens to get focused, however, in the reflection type, the solar radiation falling on the collectors are reflected to become focused on a cell. Finally, in the hybrid type, the solar radiation is divided into two parts, one part is reflected, and the other one is refracted. Moreover, there are diverse types of solar concentrators such as parabolic, hyperboloid, compound parabolic and Fresnel lens.

Fresnel lenses have some notable features. They are light-weight, they can enhance the energy density effectively, and they can be manufactured in mass production. As a result, they have been among the best selections for concentrated solar energy utilization

There are two kinds of Fresnel lens: imaging and non-imaging. The imaging lenses are creating the image of the sources in their focal planes. As it is claimed in [13], the imaging Fresnel lens produces a sharply concentrated hotspot, which is affecting critical non-uniform flux problem for photovoltaic applications. Conversely, non-imaging Fresnel lens design is normally convex shaped in order to obtain a high concentration ratio and flux distribution with short focal length. Consequently, compared to the imaging lenses, non-imaging lenses have the benefits of a smaller volume, bigger acceptance angle, greater optical efficiency, smaller focal length, and higher concentrator ratio [14]. Accordingly, non-imaging concentrators have been more frequently used in concentrator photovoltaic systems.

In the focal area of the Fresnel lens, the reflector is implemented to improve the concentration level of the system as a second stage. There are several classifications of reflectors, such as the compound flat concentrator (CFC), V-through, and prism lens.

1.2 The project overview and objectives

PV panels are uncomplicated and cheaper than CPV panels. Nevertheless, they have lower efficiency and for a given panel size, PV's produce less electricity.

On the contrary, CPV panels are more complex, more expensive, and their maintenance cost is higher than PV's.

On the other hand, implementing CPV panels have some benefits. The first part of a CPV panel is optic, either Fresnel lens or parabolic mirrors, are manufactured by the cheap specialized glass.

Besides, the semiconductors that are used in CPV are developing. Accordingly, it is possible to increase the efficiency by using a different material to not only decrease the cost but also to enhance the efficiency.

Another part of CPV panels is dual-axis solar trackers that are applied to keep the CPV panels orthogonal to the solar radiation. As the trackers are getting accessible and affordable, the total efficiency increase undoubtedly.

Dependability and endurance of the CPV system are the influential affairs regarding the effects of aging and soiling mainly on the optical material that make the meaningful decline in electrical output. However, the cost of CPV is considerably dependent on the optical system.

All in all, regarding the project, we should decide if it is economical to implement CPV's or not.

In this thesis, in order to obtain the power output of the CPV, we use the two-stage CPV solar panel method. The first stage of the concentrator is represented by the Fresnel lens, while the second stage designed by the prism lens as the secondary lens. Afterward, this panel is implemented on the dual-axis tracker. In addition, a PV panel is implemented to this tracker to make it possible to discuss between the CPV and PV panel.

Chapter 2

LITERATURE REVIEW

2.1 Background and state of the art

2.1.1 Photovoltaic solar panel

A PV cell is fundamentally a semiconductor diode that converts solar radiation to electrical electricity using p-n junctions. PV cells are conceived of numerous types of semiconductors with the different manufacturing method. The monocrystalline and polycrystalline silicon cells are the only found at commercial scale at present time. By using either bulk or thin Si film connected to electrical terminals, silicon PV cells are formed. Fig. 3 illustrates the physical structure of a PV cell.

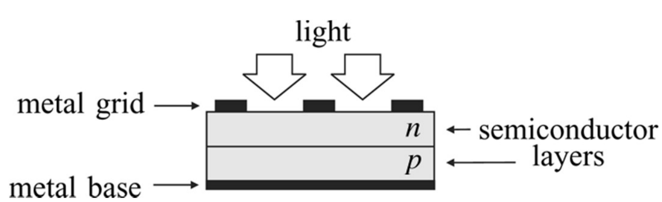


Figure 3: The physical structure of a PV cell [15]

PV cells have a p-n junction similar to a diode. By using photons, it creates the electrical power. It has the capacity to absorb the solar irradiance and mobilize the photons to electrons until it converges. When a load is connected to the PV cell the charges flow through it as a direct current while the solar radiation gets stop [16]. The equivalent circuit of the single-diode and two-diode PV cell is shown in Fig. 4 and Fig. 5.

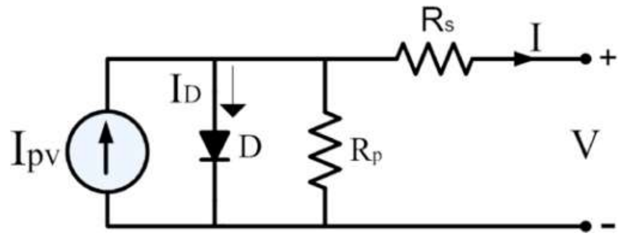


Figure 4: The equivalent circuit of the one-diode solar panel [17]

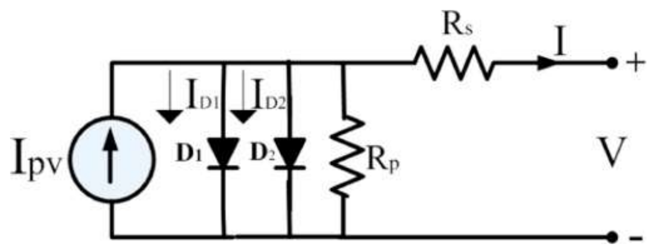


Figure 5: The equivalent circuit of the two-diode solar panel [17]

Sun radiation is directly related to the output power generated, instead, the output power decreases with increasing temperature.

The solar array fixed panel in the northern hemisphere must be faced toward the south and vice versa.

Inasmuch as PV cells operation is deteriorated by partial shading and hotspots [18], some investigators are proposed many methods to improve the efficiency, such as using the solar tracker and implement MPPT [19, 20]. Whilst, in some cases, the thermal output of the solar panel is advantageous. For instance, Zondag [21] have documented that glazed photovoltaic thermal hybrid (PVT) is the most efficient PVT arrangement, although single glazing narrowed the electrical output energy by approximately 1%, the thermal output is doubled. As a result, the bigger solar cell is able to generate more solar thermal energy, while the PV current and the output power decrease.

A solar cell is core power exchange unit of a PV system. It turns light energy directly into electrical energy and they are made from semiconductors. Solar cells have much in the same manner as other strong state electronic gadgets.

Nowadays, several kinds of solar cells exist; however, the most widely used category is the silicon-based cells. The mono-crystalline cell has the highest efficiency among different types of silicon-based cells inasmuch as their symmetric atomic structure, even though the manufacturing cost of this type is more than other silicon cell type [22]. On the one hand, these cells are much more precious than common ones. On the other hand unlike common solar cells, which cannot operate above about 100 suns because of the base resistance, they can operate at much higher concentrations, in the range of 300 suns, inasmuch as they are not traversed from up to down by any current [23].

A power inverter is an electric contraption that converts direct current (DC) to alternating current (AC). Considering solar panels produce only DC power, an inverter is needed to convert it to AC power so that it can be transferred to the loads that need AC. The inverter must not only have the inclination to deal with the normal power level, but it should also be comprehensive with the voltage of the load and the supply.

2.1.2 Concentrator photovoltaic

The concentrated solar power generation technologies could be classified into two big categories: Concentrated Photovoltaics (CPV) and Concentrated Thermal Power (CTP) generation.

To focus solar radiation on a small receiving solar cell, the CPV is invented. Consequently, the cell area in the focus of the concentrator can be diminished by the concentration ratio. Simultaneity, the light intensity on the cell is enhanced by the same ratio. In other words, the refractor lens or mirror should be implemented as a CPV cell surface. Therefore, the optimum configuration of the system is set regarding estimated efficiency and total cost [7]. In 1976, the efficacious evolution of CPV technology commenced at National Sandia Laboratories with the installation of 1kW peak array, which is denominated Sandia I and Sandia II, later [24]. The components of this pathfinder criterion were Fresnel lens, dual axes tracking, concentrator silicon cells at 40x concentration ratio and analog closed-loop tracking control systems. Numerous proliferation, in some cases supplemented by component improvements, were soon made in France, Italy, and Spain, with prototypes ranging from 500W to 1kW [25]. The following figure depicted the simple triple-junction solar cell double-diode equivalent model.

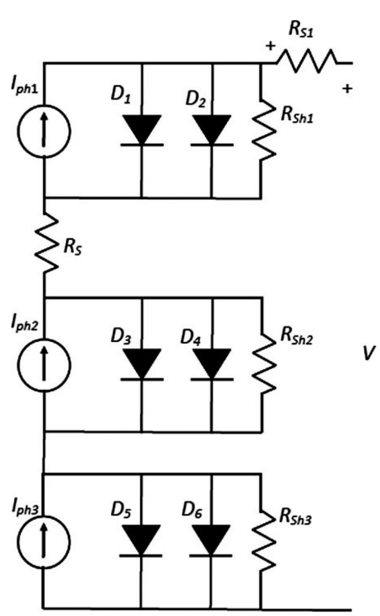


Figure 6: The double-diode equivalent of triple-junction solar cell model [26]

MJSC systems require accurate double-axis sun tracking system, inasmuch as they can merely perform with high efficiency at a high concentration ratio [27]. Moreover, the incident radiation should be perpendicular to the multijunction solar cell; therefore using double axes solar tracker seems essential. Conversely, both direct solar radiation and diffuse solar radiation are affecting the output power of a fixed conventional PV panel system. As a result, the use of CPV at a place where does not have high direct normal irradiation (DNI) is not reasonable since CPV modules cannot utilize diffuse solar radiation.

An adequate way to make full use of sunlight is the solar concentration technology which using a Fresnel lens. Inasmuch as Fresnel lenses contribute great optical efficiency besides their minimal weight and low cost, they are utilized as solar concentrators.

The greatest efficiency of instant PV system has achieved by tandem solar cell based on III-V materials, which have the conversion efficiency of over 46% [11]. One of the most successful multijunction solar cells is a triple-junction system with p-n junctions in GaInP, GaInAs, and Ge as depicted in fig 7a. However, there are other material combinations, which have larger efficiency theoretically, as it is shown in fig 7. Meanwhile, the effective conversion efficiency of the aforementioned junction is adjacent to its theoretical one. Theoretically, it is feasible to have a higher efficiency by adding a 1eV material between the GaInAs and Ge junctions as represented in fig 7b. Figure 7, illustrates the notions of five high-level multijunction solar cell with thermodynamic efficiency limit of each construction under 500x concentration ratio in standard air mass (AM 1.5) conditions [28].

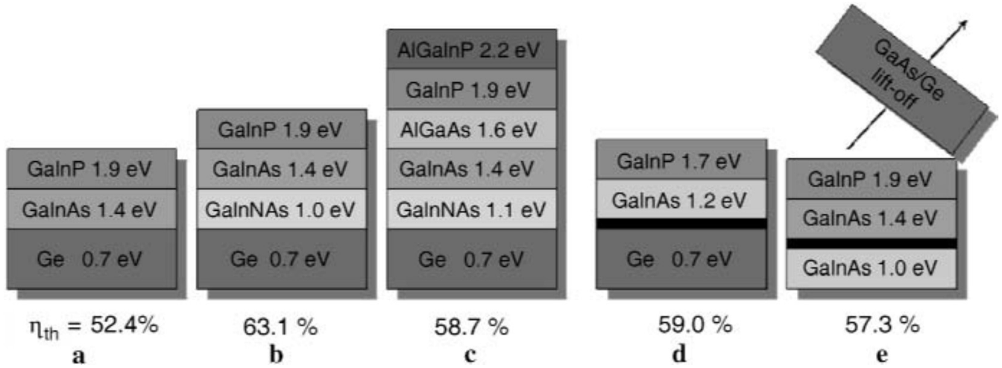


Figure 7: Different concepts of the multijunction solar cell [28]

2.1.2.1 Solar tracking

In order to obtain the maximum energy, a photovoltaic tracking system is applied to follow the sun from sunrise until sunset [29]. Two kinds of solar tracker are single-axis and dual-axis solar tracker. Single-axis solar trackers aligned with north and south to allow the panel to arc from east to west. While the dual-axis solar trackers are following the sun according to both the azimuth and elevation angle. By appending a solar tracker to a PV panel, the output solar energy increases 20% to 50% regarding the location and climate [30]. For instance, the experimental study in [31] shows that applying solar trackers have increased the generated energy at most 20%.

Single-axis and dual-axis solar trackers can be divided into two categories as sensorless and sensor-based solar trackers. A sensor-based solar tracker using photosensors operates as a closed loop system to provide relevant feedback signals for tracking the sun direction [32]. In contrast, the sensorless solar tracker has lower fabrication cost rather than a sensor-based one, while the accuracy is reasonable. The motor drive causes the step motor run by producing an electric current. Then, the torque that is generated by a step motor, move the mechanical devices such as shafts and gears.

2.1.2.2 Passive type solar trackers

The passive solar trackers move the tracker by prompt an unevenness that is begun by the solar heat. The passive solar trackers are not frequently utilized for the applications, which need high accuracy, like concentrating solar power (CSP). Nevertheless, in conventional flat PV panel applications, passive solar trackers can be manipulated.

2.1.2.3 Active type solar trackers

Active solar trackers sustain control over the tracker mechanically by using motors and gears mechanism. These kinds of trackers are more accurate and more popular even though they must be powered to run. Active solar trackers with a single-axis system ordinarily not only utilized lesser energy, but also have simplicity rather than multi-axes systems.

2.1.3 Fresnel lens concentrator

In 1822, Augustin Jean Fresnel invented a lens named Fresnel lens [33]. Fresnel lenses have been preferred because of the small volume, light-weight, and low cost [34] while conventional lenses over 5 cm are too thick and expensive to be practical [35].

The Fresnel lens principal is based on the fact that whether the transparent interface is homogeneous or has the different density [36]. Figure 8 illustrates the schematic of the conventional and Fresnel lens.

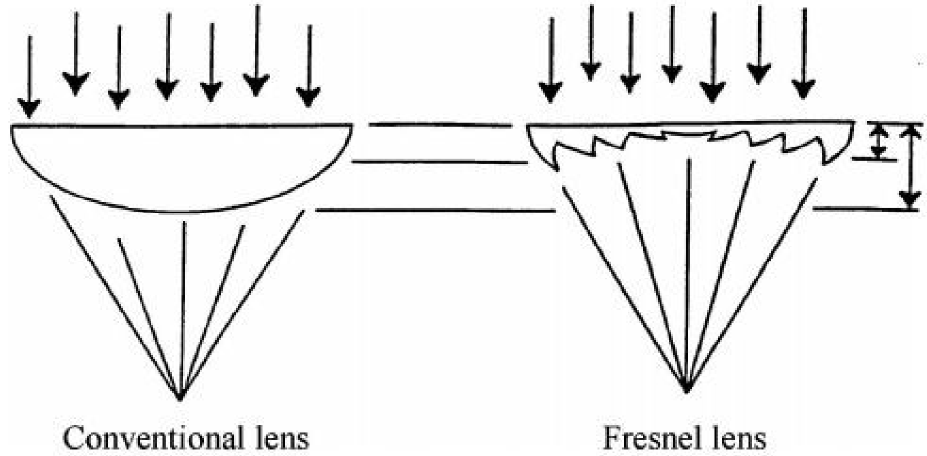


Figure 8: Conventional lens and Fresnel lens [37]

Fresnel lenses are classified into two group: refractive lens and reflective mirrors. Howbeit refractive lenses are utilized in the photovoltaic projects; the reflective mirrors are applied for photothermal applications.

Another classification for Fresnel lenses represents as follows: imaging and non-imaging lenses. Implementing imaging Fresnel lens when it is necessary to have the image of the source at the focal point of the lens. Nonetheless, the precise image of the source is not composed at the focal point when non-imaging lenses are used.

The tracking accuracy decreases when non-imaging Fresnel lens is implemented, nevertheless, the tolerances in both manufacturing and operation is higher [36]. Compared to the imaging lenses, non-imaging lenses have the benefits of a smaller volume, bigger acceptance angle, greater optical efficiency, smaller focal length, and higher concentrator ratio. Another significant characteristic of the Fresnel lens is f-Number, which is the ratio of the focal length to the diameter in case of the circular lens and diagonal in case of the square lens. This proportion describes the convergence speed of the lens. it implies that by lessening the f-Number of a lens, it is feasible to diminish the size and the cost tracking mechanism [36].

2.2 Other technologies

CPV systems can be separated into two extensive categories named point-focus and line-focus systems. The point-focus systems consist of the square Fresnel lens, parabolic dishes, and central receivers. However, line-focus systems contain linear Fresnel lens and parabolic troughs. Although point-focus systems are more expensive, they are more economical, inasmuch as the expenses related to the area of line-focus systems balance is much larger. Moreover, if the concentration ratio of a line-focus system decreases ten times, the required area of the solar cell should be ten times larger, approximately [38].

Another important block in a closed loop system is a feedback device. The camera-tracking sensor (CTS) is often applied as a feedback device. Through the universal asynchronous transmitter or receiver protocol, it affords the coordinates of the solar position to the controller of the solar tracker. Finally, the CTS feedback devices yield the sun information such as the position of the object. The accuracy of CTS devices is very noble inasmuch as it can detect the sun only in one pixel. -

2.3 Related and recent publications

Das et al. [39] studied a new model of a MJSC to develop the output efficiency. By using MATLAB/Simulink, the proposed model attested that using the tandem cell with P&O MPPT technique could increase the maximum power output roughly 3-times rather than conventional PV cells. Regarding the MJSC limitation for collecting materials to generate the most efficiency, crucial requirements are as follows: the material selection and bandgap diversity on each sub-cell. It is inferred that the amount of power that is generated by GaAs, is greater than Si, although the GaAs is more expensive compared to Si empirically. As it is explicated, the combination InGaP/GaAs/Ge submitted the best execution in tandem cell performance.

An inclusive investigation around high concentration photovoltaic systems (HCPV) and its applications are outlined by Zubi et al. [40]. High concentration systems are suitable for districts with high annual direct solar radiation since they just accept the direct solar beam radiation to accomplish cost rebates by means of saving in semiconductor appropriated considering the semiconductor material that is demanded is very low moderately. The majority of the companies that are using III-V cells employed in HCPV, implement Fresnel lens as optics. Nevertheless, Micro-dish, segmented reflector and dish & dense array receiver are also applied. The difference between the ideal experiment and real industrial one on these kinds of cells is nearly piddling, inasmuch as their size is typically small.

A triple-junction solar cell model using MPPT is stated by [26] which attempted to forecast the performance of a Photovoltaic Thermal (PVT) solar concentrator. Whilst the proposed model acknowledged both environmental conditions and concentration factor, it is serviceable not only to estimate the system loss but also to evaluate the overall performance. The triple-junction solar cell equation can be procured independently considering each junction and every single model, too. By using MATLAB/Simulink, the I-V curve of the proposed model of the InGaP-InGaAs-Ge triple-junction at different values of environmental conditions is discerned.

A two axes solar tracking using a multijunction solar cell is presented by Oh et al. [27]. The proposed method is a closed loop method, which used CTS as a feedback device using the ray-tracing software. Firstly, regarding open loop mode, the target position and the motion profile are acquired. Then change the position of the tracking panel by applying a closed loop. Since changing the position of the tracking panel needs energy, it does not move as long as the tracking error of less than 0.1°. Setting the maximum position error to be less than 0.7°, the efficiency of solar energy systems is concerned. The maximum power was produced experimentally at solar noon by using MJC, had an average solar conversion efficiency of 21%.

Implementing solar tracker for PV panels in hot and cold climates is considered by [41]. The panel is installed in three different positions as tracking the sun, miss tracking, and fixed panel. As it is concluded, the gain in electrical energy is about 39% in the case of tracking the sun in a cold city like Berlin, Germany. However, because of the overheating effect, this amount of energy does not more than 8% in a hot city like Aswan, Egypt. Due to the energy required for running the tracker is from 5% to 10% of the energy produced, using the solar tracker is not economically suggested in hot and sunny territories.

The functioning result of two kinds of double-axis sun-tracking PV system was investigated in [42]. The third PV panel is fixed at the latitude of the location. As a result, although the maximum energy obtained from double-axis, the solar tracker is 30.79% more than the fixed solar panel; the expense of the tracking system is specifically higher than the fixed one.

Almonacid et al. [43] have carried out a classification of the system and the practical analysis during 2 years of operation. The total solar energy was first measured by the formulas and next, it was compared to the experimental data. To find out the DC energy produced by the fixed installation, the amount of the current, voltage, and power of the system at maximum power point have been measured from the daily mean monthly radiation and the system parameters are at standard test condition.

The experimental study to make a debate about two geometrically non-imaging concentrators namely the compound parabolic concentrator (CPC) and the V-trough reflector was appraised by [44]. Implementing photodiodes, the intensity of the solar radiation received at the receiver cell. Accordingly, an accession in current is undeviatingly comparable to a multiplication in irradiance and linear for the majority of the I-V curve. Theoretically, CPC accomplishes better than V-trough concentrators in case of equal optically equivalent, however, its manufacturing cost and the geometrical size are not proper. It was experimentally illustrated that implementing V-trough, the PV panel temperature is 11.1% higher than a CPC collector with similar initial installation and concentration ratio.

A new offline sensorless dual-axis solar tracker is applied in [45] that was implemented for both PV and CPV. The sensorless offline dual axes have manageable structure and its construction cost is lower than the sensor-based one. Furthermore, using offline technology, the system does not have a feedback signal and external disturbance and weather condition will not affect the operation. The tracker that is proposed has just 0.43° error with 24.59% more solar energy is generated compared to the fixed conventional panel.

Sumathi et al. [46] are conveyed different solar tracking methods that are affirmed recently as follows: passive trackers and active trackers for both single axis and dual axes. It followed out that compares to the passive tracker, active trackers were more generally used. Additionally, amid the different types of the active solar tracker, dual axes have more efficiency regardless of subsistence issue.

Madala and Bohem [47], have highlighted a survey of non-imaging solar concentrator mechanisms for both fixed and passive tracking applications. Passive tracking systems are based on the differential thermal extension of materials such as refrigerants or shape memory alloys. Although passive trackers are economical and less complex compared to active trackers, they are less efficient. In order to evade the disadvantages of the imaging concentrators, non-imaging techniques of concentrating solar radiation are acquired. Furthermore, some stationary solar collectors such as a flat plate and a concentric cylindrical tube have been widespread in low-temperature (less than 94 C) applications. There are several designs of non-imaging solar concentrators that are studied in this review paper such as compound parabolic concentrator (CPC), prism-coupled CPC, non-imaging Fresnel lens, and multi-stage non-imaging concentrator, which are utilized in various applications. As it is concluded, multi-stage concentrators are not only providing higher concentration but also they are economic.

An exhaustive investigation using Fresnel lens in concentrated solar energy practical application is appraised by Xie et al. [34]. Fresnel lenses are used in different imaging and non-imaging solar applications. On the one hand, imaging Fresnel lens solar concentration systems are intended as focusing projects and the research has concentrated on the promotion of valuation technologies for them under solar radiation using ray-tracing technologies such as air heater, solar collector, photoelectric, hydrogen generation, and concentrated PV. On the other hand, non-imaging Fresnel lens solar concentrations systems are a suitable compilation of solar energy. Since the object of using Fresnel lens is the collection of energy, not the revival of an accurate image of the sun. Some applications of this system are like solar thermophotovoltaic, modular concentrated PV, and two-stage systems. As it is concluded, for employing imaging systems, the accurate tracking should be utilized which is seemed costly. However, non-imaging Fresnel lens solar concentration systems are presumed to widespread using in the field of commercial solar power engendering with the implementation of lowing construction complexity.

P. Yeh and N.Yeh [48], have demonstrated a spectrum control method that advances the concentration flux uniformity and also redirects the energy for various locations' spectral composition details to increase the temperature under Fresnel lens. Additionally, they have delved into suitable second stage compound flat concentrators to rescue the radiation, which is not in the objective range. by adding spectrum splitters sets to the two-stage 2D Fresnel lens-based solar concentrator system to explore the spectrum distribution insight on the target area of the Fresnel lens solar concentrator. To determine the position and the coordinate sets of all prisms on the lens, a model is proposed in this study. As it is derived from this project, the correctly positioned dichroic mirrors and two-stage reflectors of right dimensions not only redirect the wanted spectrum to objected areas but also reallocate the temperature driving energy.

Experimental measurements of a prototype high concentration CPV module with Fresnel lens has been experimented by Yamada and Okamoto [49].

Chapter 3

SYSTEM DESCRIPTION

3.1 Introduction

Considering the amount of fossil fuel consumption, it is inevitable to consider alternating renewable energy sources.

There are several priorities for determining the optimum energy solution for a specific application i.e. the location, the ease of implementation, technology reliability, energy output capacity, and cost.

Solar energy is simple to accumulate and use with comparatively lower overall cost compared with the other renewable energy sources such as wind, wave, and tided. Although solar energy has merits of being nonpolluting and insignificant environmental impact, it has some limitations such as intermittent energy supply and energy conversion efficiency. However, a large collecting area is needed to get a sizeable amount of energy when implementing solar panels.

With the advancement of the modern technologies, there are more effective solutions to utilize solar energy to improve our quality of life and be beneficial to the environment as well [50].

To absorb the sunlight, PV system applies semiconductor materials, which involve photons with different wavelengths. The higher energy will have the greater electron volt, as a result, they produce more energy to jump out of the band gap and attain a free electron. Sunlight concentration could increase solar cell efficiency and reduce the proportion of cost or efficiency ratio.

Multijunction solar cell technologies can absorb more photons of the different wavelength. Its architectures are capable of up to 68.88% theoretical efficiency limit, and up to 50% efficiency in practice. Triple-junction cells are more difficult to manufacture than silicon cells and also cost much more per unit area, in contrast, the triple-junction solar cells cost much less in terms of per unit power utilized by means of the use of solar concentrators [51].

Concentrated Solar Photovoltaics (CPV) systems make use of concentrator optics to concentrate the solar radiation from a bigger area onto a smaller area where the solar cells are positioned. In order to implement the CPV panel compared with the single-junction PV panel, not only a smaller area of solar cells is required, but also using CPV may diminish overall cost with high-energy conversion efficiency.

The CPV systems can be divided into low concentration (LCPV) (1-100suns) and high concentration (HCPV) (100~1000suns) [52]. LCPV systems use comparatively lower cost crystalline silicon solar cells and require only passive cooling to maintain the system's nominal performance. Nevertheless, HCPV systems use high-efficiency multijunction solar cells, which include several p-n junctions, and each junction attuned to the various wavelength of solar radiation. In order to implement the high solar concentration, HCPV systems require active cooling and high precision dual-axis tracking to make the solar beam radiation perpendicular to the cells.

In the CPV system that was applied in this study, parallel light rays from the DNI that is incident on a primary optical element are collected on a secondary optical element. The second optical element, which is the prism, scatters the intensity and spectral content of the concentrated light all similarly across the area of the CPV receiver as it is displayed in the figure below. Accordingly, the extended photon flow on the CPV cell enhances the photocurrent density. As a result, the power output of the cell raises.

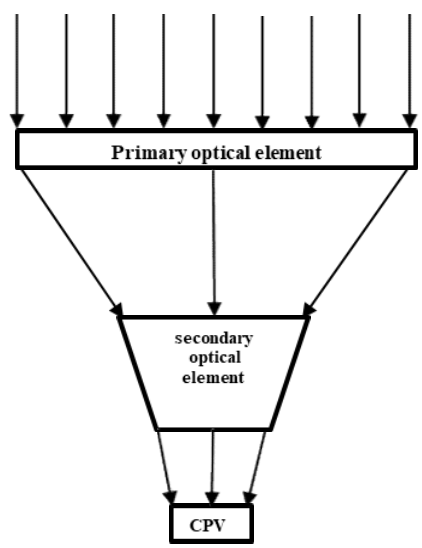


Figure 9: Schematic of the operation of a CPV module

The efficiency of a CPV cell can be measured as follows [35]:

$$\eta_c = \frac{P_{out}}{P_{in}} * 100 = \frac{V_{C(max)} * I_{C(max)}}{X_O * I_{rd} * A} * 100 \quad (1)$$

Where I_{rd} is the direct normal irradiance, A is the area of the CPV cell, and X_O is the operational concentration.

Accordingly, the module efficiency can be measured as [35]:

$$\eta_m = \frac{P_{out}}{P_{in}} * 100 = \frac{V_{m(max)} * I_{m(max)}}{I_{rd} * A_m} * 100 \quad (2)$$

Where A_m is the area of the module.

As it is noticed previously, the CPV mechanism that is used here is a two-stage method with linear Fresnel lens and prism. Firstly, by using a Fresnel lens, the perpendicular radiation that is caused by the two-axis tracker concentrate on the top of the prism that is two times the bottom of the prism. Moreover, in the end, the radiation goes to the cell, which is exactly equal to the bottom of the prism. As a result, the conclusive irradiance of the CPV is 4 times higher in this case. On the plat, PV and CPV are placed in the equal distance from the sun. The receiver system has the fast response time; therefore, it can precisely follow the sun's movement.

3.2 System components

It is impossible to operate the CPV system just with the high-efficiency multijunction solar cells. Therefore, concentrator optics are also necessary to collect, concentrate and distribute concentrated solar radiation onto the high-efficiency solar cells.

The CPV system has the special system design to accomplish the functionality of concentrating solar radiation, which enhances the overall system conversion efficiency.

The CPV system fundamental components for the design objectives are considered in the following sub-sections:

3.2.1 Optical solar concentrator

Implementing multi-junction solar cells, propose a better absorption of photon energy rather than conventional PV solar cells. Consequently, the performance and power output of a CPV cells system are better than PV solar cell systems. The CPV cell's sub-cells are produced of materials with quantum efficiency profiles that span the solar spectrum range from 300nm to 1800nm. As a result, it causes to absorb a much larger portion of the solar spectrum [53].

One of the most important parts of the development of CPV systems is the optical configuration and features of the optical elements.

There are two levels of the optic in this project as primary Fresnel optics and secondary optics. As it is defined before, a Fresnel lens is a small, weightless, and comparatively flat lens which is used to concentrate incident sunlight by using Fresnel zones [53]. The first type of concentrator uses refractive optics like Fresnel lens to concentrate sunlight to a very small area at a high concentration ratio. This kind of design is very common in CPV panel that makes an array out of small Fresnel concentration PV modules. The other type of concentrators is reflectors or lens such as linear Fresnel lens (LFR) and parabolic dish.

Refractive Fresnel lens that is applied in this study, are usually made of polymethyl methacrylate (PMMA). Moreover, since they are fabricated by compression shaping, it is feasible to form them in any shape or size [53].

In addition, the most important roles of a prism lens as a secondary optical element is to enlarge the acceptance angle to capture more concentrated direct radiation from the Fresnel lens to distribute the DNI uniformly across the device's surface [53].

In contrast, applying the system just with a primary Fresnel lens can distribute the structure of a non-uniform illumination over the CPV's cell surface [54].

This study comprises an external reflective concentrator called solar prism and internal refraction optics called LFR to concentrate solar radiation on the solar cells.

Two important factors to ascertain the secondary element's dimensions are the focal length of the Fresnel lens and the shape of the reflective secondary element.

A schematic diagram of the prism lens used in this study is illustrated in figure 10.

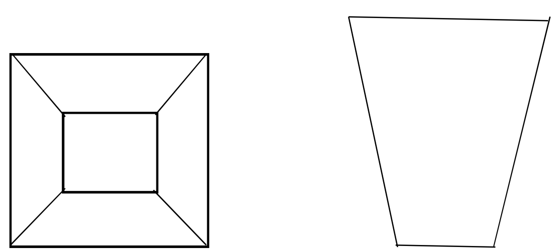
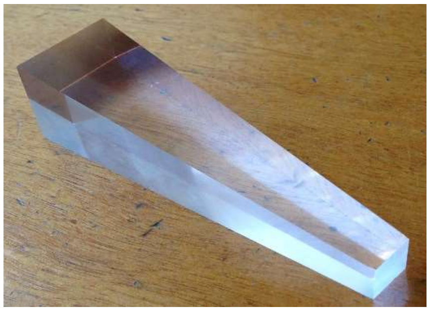
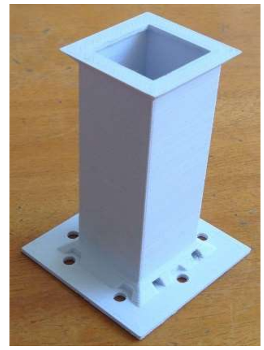


Figure 10: Prism lens schematic diagram

Each solar prism's dimension is 10*10 mm and 20*20 mm on 2 sides with the 20mm height. The prism should be set in the special case as shown in figure 11.



a



b

Figure 11: a. Prism Lens, b. Prism Lens case

Moreover, each LFR is a 33*33 cm plate with 32 cm focal length. Therefore, the area of the Fresnel lens is 0.109 m^2. Figure 12 depicts the Fresnel lens.

Figure 12: Fresnel lens

When the incoming beam's incident angle at the entrance face equals to that beam's refraction angle at the exit face, the prism reaches minimum deviation. Consequently, maximum transmission befalls. Small variations in the angle and the positioning of the prism have the minimum possible effect on the beams' turning angle in the minimum deviation condition, that cause to minimize the errors in the lens fabrication and the system development while the lens's focusing power maximized [55].

3.2.2 Solar cell module

Solar cell module is the key to energy conversion of concentrated solar radiation to electricity. The cells that are implemented in this project are 10*10 mm, which exactly equal to the smaller side of the solar prism.

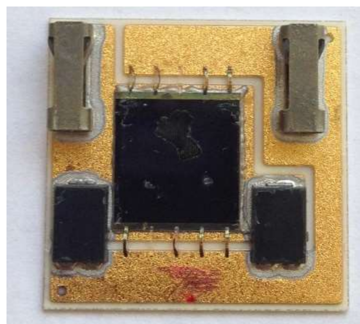


Figure 13: CPV solar cell

3.2.3 Solar dual axis tracker

By using a dual axis tracker, the normal incident solar radiation intensity increases. In this study, a two-axis solar tracker has designed and constructed that both PV and CPV are mounted on it. Moreover, the tilt angle (elevation) and azimuth are being tracked. Tilt angle tracking is done by an actuator. The actuator is attached to the plate and connected to the solar tracker controller. The solar tracker controller that is implemented here is shown in figure 14.

Figure 14: Dual axis solar tracker controller

This controller is dual axis solar tracker controller with LCD display and it employs specialized four-quadrant structure light sensor to sense the solar irradiance in four directions.

Azimuth tracking is done by a geared dc motor as seen in figure 15. A sensor that consists of four optic sensors is used to detect the position of the sun. This sensor is connected to a motor control circuit that then drives the motors. The range of the tilt angle is from 0 to 90 degree and the range of the azimuth angle is from 0 to 330 degree.

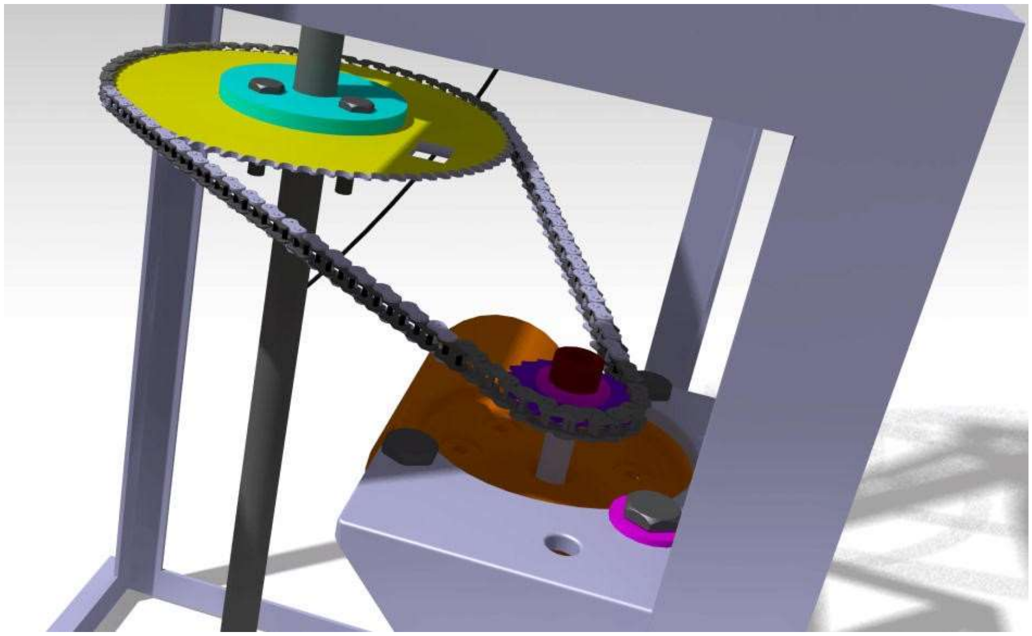


Figure 15: DC motor connected to the gear

The plate which is PV, Fresnel lens, and sensor are implemented on it is shown in fig 16.

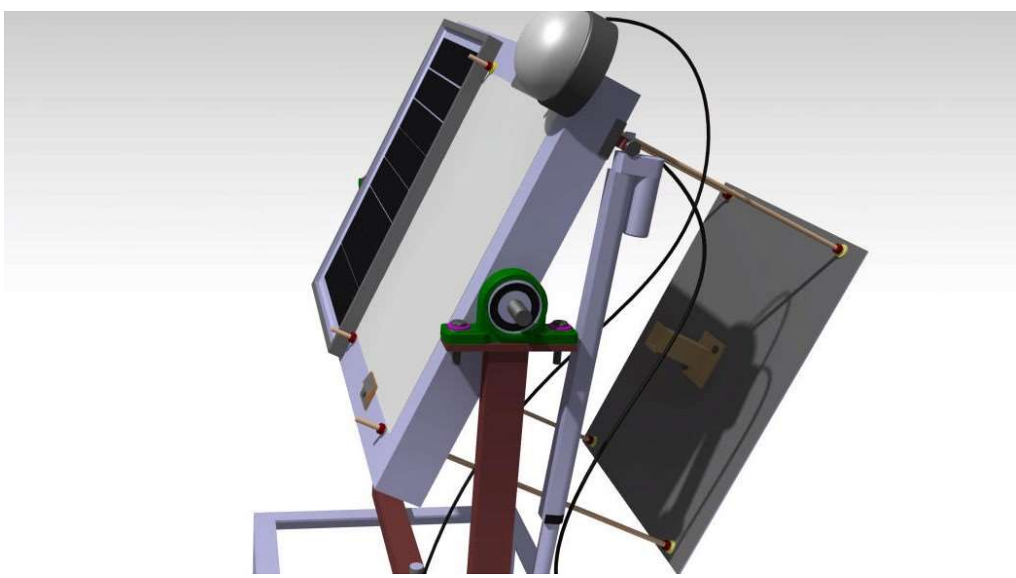


Figure 16: The designed panel

As it is obvious, the PV panel and Fresnel lens are implemented on the plate. The focal length of the Fresnel lens is 33 cm that should be set in the middle of the prism lens. In addition, the length of the prism lens is 10 cm; accordingly, the distance between the Fresnel lens and CPV solar cell that is exactly under the prism lens should be 37 cm.

The following picture displays the plate that both CPV and PV panels are implemented on it.

Figure 17: The plate with Fresnel lens and PV panel

3.2.4 I-V measurement system

The performance of photovoltaic solar panels can be distinguished by containing the correlation between panel current, voltage, and power output under various environmental conditions and panel adjustment. In this section, an overview of the solar panel, the I-V measurement system is discussed. The low power measuring circuit runs from a small 9-12 VDC source. The microcontroller that is applied here is MSP430. Accordingly, the two main parts of the system are the electronic circuit that programs current achieved from the solar panel under test and a MSP microcontroller.

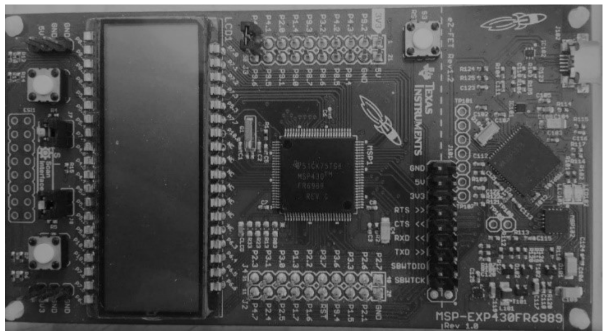


Figure 18: MSP-EXP430

The control circuit that is shown in the figure below is used to control the current drawn from the solar panel. The circuit represents about 8 milliamps and can be powered by any DC voltage in the range of 9 to 12 V. Moreover, by using data acquisition system (DAQ), it is possible to measure the required data from the solar panel. DAQ is the operation of measuring an electrical or physical phenomenon such as voltage, current, and temperature by using a computer. A DAQ system consists of sensors, DAQ measurement hardware, and a computer with programmable software. PC-based DAQ systems utilize the processing power, display, and connectivity abilities of industry-standard computers presenting a more flexible, and cost-effective measurement solution compared to traditional measurement systems.

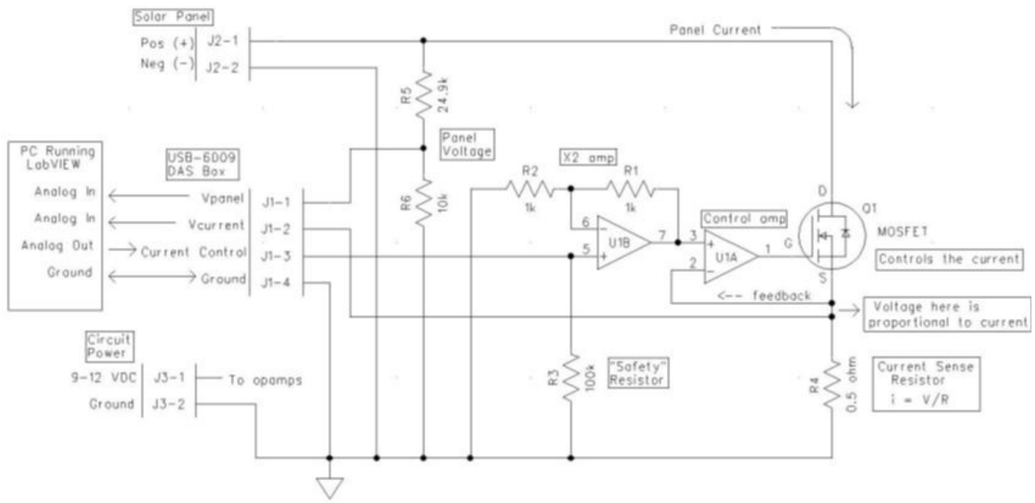


Figure 19: Control circuit

Besides, there are three connectors for the circuit. The J1 connector is from the DAQ. In J1, there are two analog outputs from the current and voltage of the solar panel plus the analog control voltage from the DAQ to the circuit. The J2 connector connected to the solar panel. Connector J3 is the battery power for the circuit.

The designed solar data logger is depicted in the following picture. By using this data logger, it is possible to collect data hourly.

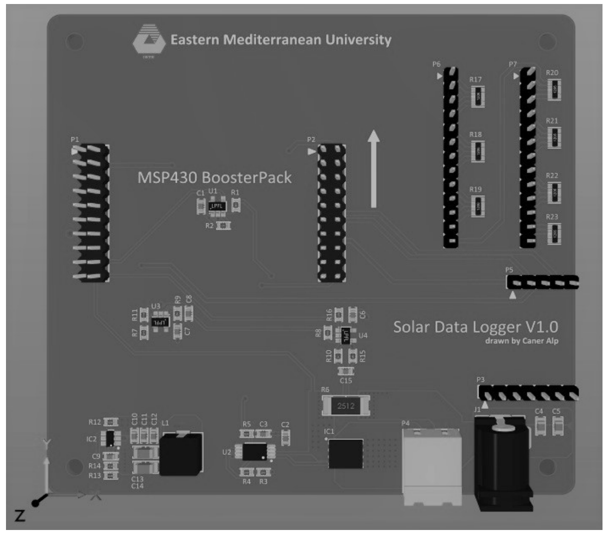


Figure 20: PCB circuit of designed microcontroller

3.2.5 Conventional PV panel

In this study, a conventional PV solar panel is applied to the system. This PV panel module type is 35*30 cm. Therefore, the area of this panel is 0.105 m^2. The open circuit voltage of this panel is 21.70 V and the short circuit current of this panel is 1.25 A. In addition, the maximum output power of this panel is 20 W.

The conventional PV panel is implemented on the plate of the proposed dual-axis solar tracker. Therefore, it is possible to collect data at the same time and place with the two-stage CPV solar panel.

3.2.6 Pyranometer

The pyranometer is applied to measure the solar radiation. The solar radiation is absorbed in the thermopile sensor of the pyranometer and activates the sensor to produce a voltage signal proportional to the amount of the incident solar irradiance. The utilized pyranometer pointing accuracy is 0.2° with the range of operating temperature of -20 to 50 °C. In addition, its supply voltage and power consumptions are 24 V and 13 W, respectively. Figure 21 depicts the pyranometer. In this study, two pyranometers are used to measure global solar radiation and diffuse solar radiation. To collect diffuse solar radiation, the pyranometer should be shaded.

Figure 21: Pyranometer

Chapter 4

EXPERIMENTAL PROCEDURE

4.1 The optic design

There are several ways for implementing non-imaging concentrated PV systems. In this thesis, we implement a non-imaging CPV system based on a Fresnel lens and a prism lens as a secondary lens for each cell.

The concentrator type that is used in this thesis is applying a two-stage concentrator using a Fresnel lens and prism lens as a secondary lens. In this method, the sun is concentrated by both Fresnel lens and prism lens. This method provides a wider acceptance angle for the concentrating lights passing through the Fresnel lens as the first stage. Therefore utilizing this organization needs a less precise dual-axes solar tracker. The two-stage concentrator proposes not only a higher concentration or improved acceptance angle but also a more uniform flux distribution on the PV cell than the point focusing Fresnel lens alone.

In this study, both conventional PV panel and proposed CPV panel are applied on the dual-axis solar tracker. By this method, it is possible to collect data from both panels at the same elevation and azimuth angles.

The output power of the PV panel and CPV panel is collected by the solar data logger by MSP 430 microcontroller, hourly. Moreover, the global solar radiation is measured by a pyranometer in W/m^2. Another pyranometer is used to measure diffuse solar radiation. Hence, this pyranometer should be shaded. In the end, the direct solar radiation is calculated by the following equation:

$$I = I_b \, . \, cosZ + I_d \quad (3)$$

Where I is global radiation, I_b is beam solar radiation, I_d is diffuse solar radiation, and Z is the solar zenith angle.

The designed dual axis solar tracker is displayed in the following figures. Different parts of the panel are described in figure 22.

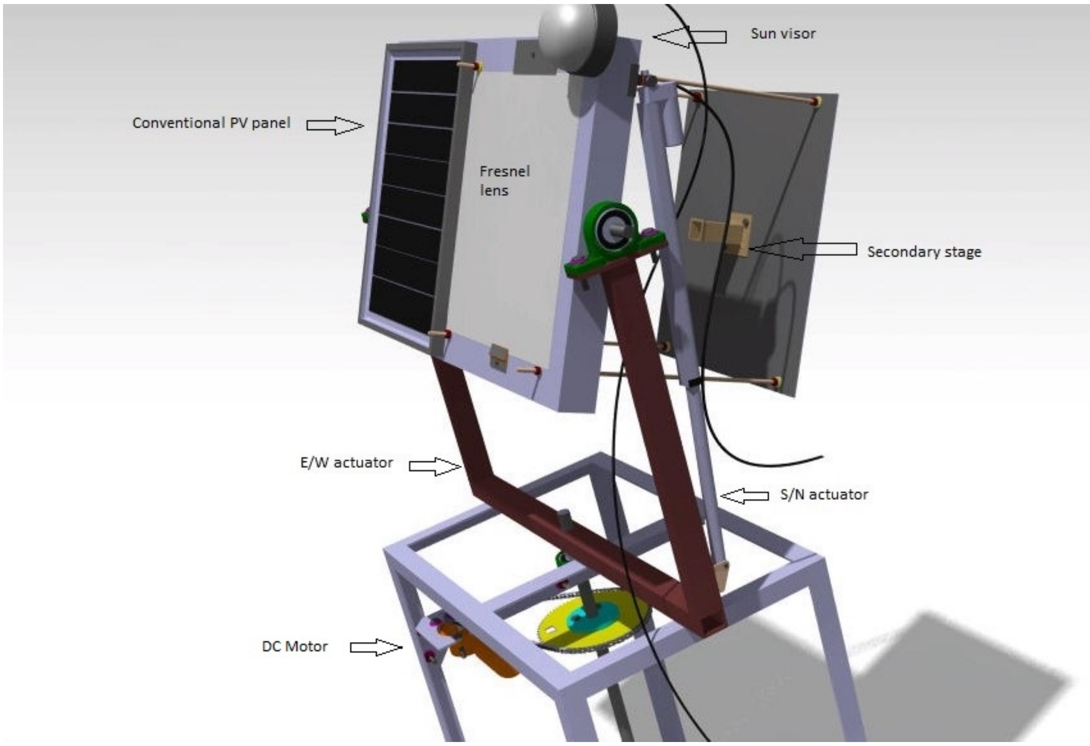


Figure 22: Different parts of the designed dual axis solar tracker

Figure 23: The designed dual axis solar tracker

Chapter 5

RESULTS AND DISCUSSIONS

This study is accomplished in Famagusta, North Cyprus for six months, from January to June on an hourly basis. In this section, the output power of both CPV and PV panels are compared to each other on four sample days of each month at 2 pm. The sample days are the first, 10^{th}, 20^{th}, and the first six months of the year 2018.

The graph for each month is presented below separately to compare the power that generated by the proposed CPV solar panel to the power that generated by a conventional PV solar panel in W/m^2. The area of the CPV and PV panels are 0.1 m^2, approximately. Hence, the total collected power data should be multiplied to 10 to normalize.

Figure 24 illustrates the comparison of the CPV and PV within four sample days of January. The total direct and diffuse radiation in January is 96.3 kW/m^2 and 38.3 kW/m^2, respectively.

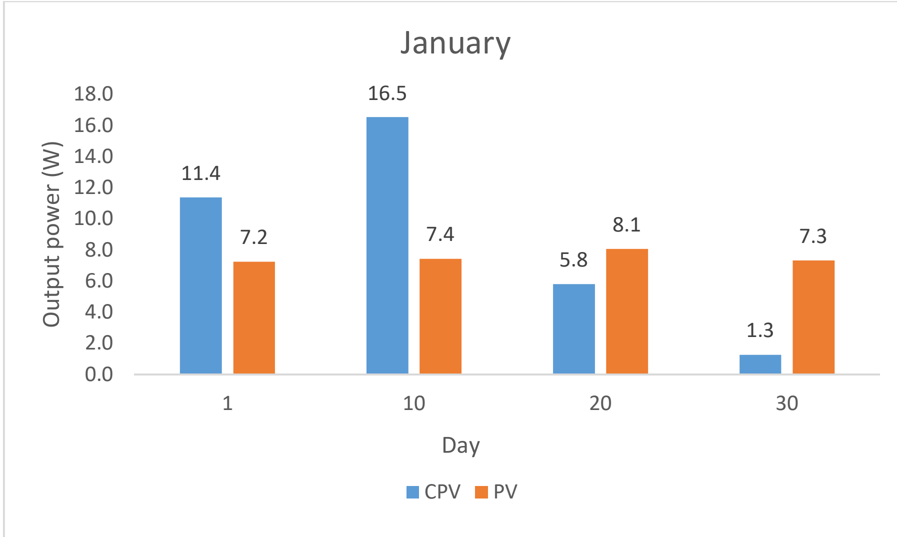


Figure 24: Comparison data between CPV and PV on January Sample days

The output powers of CPV and PV panels in January are shown in fig 24. As it is discussed before, when the direct solar radiation is more than diffuse solar radiation, the output power of CPV is more than PV. However, on January 20 at 2 pm, the direct solar radiation is 215 W/m^2 and the diffuse solar radiation is 244 W/m^2, as a result, the output power of the CPV panel is less than PV panel.

The total output power of CPV and PV panels in January is 26 kWh/m^2 and 16 kWh/m^2.

Figure 25 shows the comparison of the CPV and PV within four sample days of February. The total direct and diffuse radiation in February is 96.2 kW/m^2 and 46.5 kW/m^2, respectively.

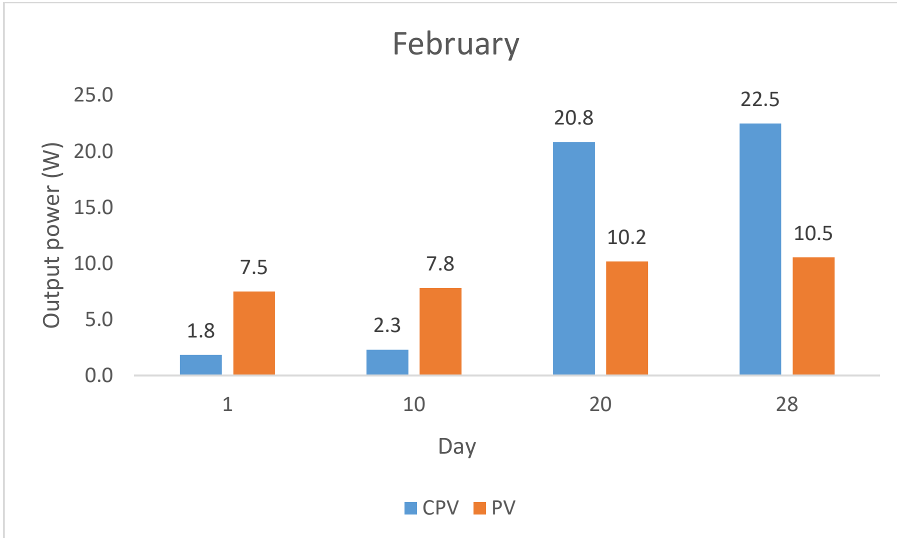


Figure 25: Comparison data between CPV and PV on February Sample days

The output powers of CPV and PV panels in February are displayed in fig 25. On February 1 at 2 pm, the diffuse solar radiation is 258 W/m^2 and direct solar radiation is just 68 W/m^2, consequently, the output power of the PV panel is more than the proposed CPV panel.

The total output power of CPV and PV panels in February is 25.9 kWh/m^2 and 19.2 kWh/m^2.

Figure 26 displays the comparison of the CPV and PV within four sample days of March. The total direct and diffuse radiation in March is 114.3 kW/m^2 and 68 kW/m^2, respectively.

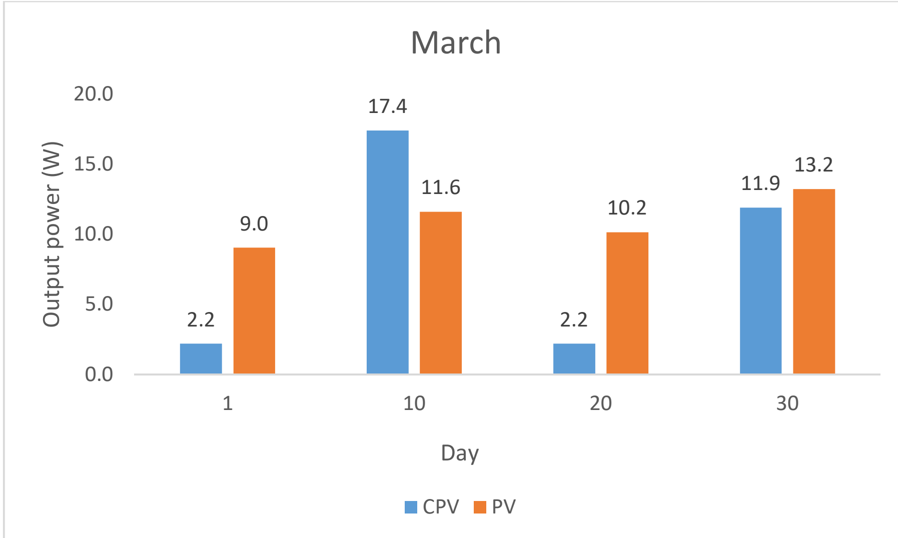


Figure 26: Comparison data between CPV and PV on March Sample days

The output powers of CPV and PV panels in March are displayed in fig 26. On days with more diffuse solar radiation, the output power of the PV panel is more than the CPV panel.

The total output power of CPV and PV panels in March is 30.9 kWh/m^2 and 28.3 kWh/m^2. It is obvious that in the summer, the amount of total direct solar radiation is higher than previous months. Therefore, the total output power of CPV panel and PV panel are more than those months.

Figure 27 illustrates the comparison of the CPV and PV within four sample days of April. The total direct and diffuse radiation in April is 143 kW/m^2 and 72.6 kW/m^2, respectively.

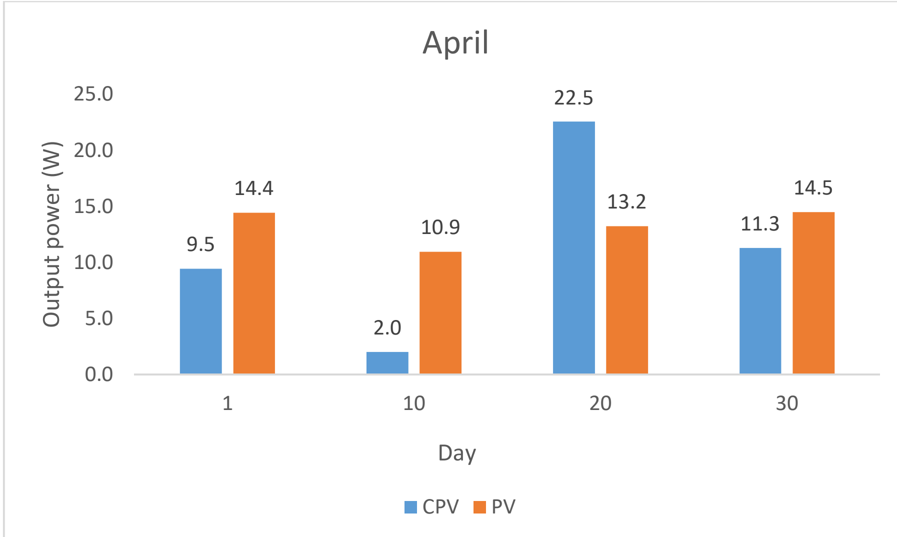


Figure 27: Comparison data between CPV and PV on April Sample days

As it is shown in figure 27, the power output of the CPV panel on April 10 at 2 pm is 2 W, while the output power of the PV panel at that time is 10.9 W. It is because of the more diffuse solar radiation on this specific moment than direct solar radiation.

The total output power of CPV and PV panels in April is 38.6 kWh/m^2 and 33.4 kWh/m^2.

Figure 28 illustrates the comparison of the CPV and PV within four sample days of May. The total direct and diffuse radiation in May is 173.1 kW/m^2 and 77.1 kW/m^2, respectively.

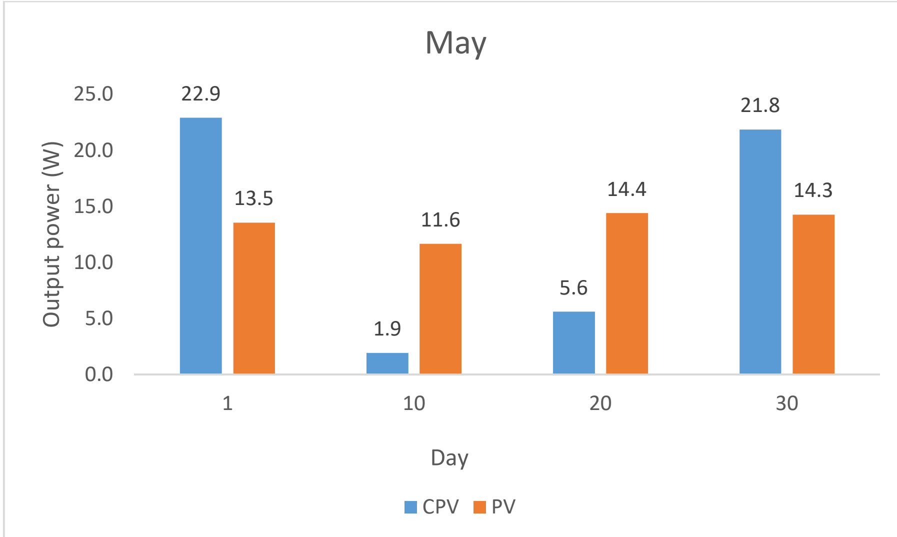


Figure 28: Comparison data between CPV and PV on May Sample days

The total output power of CPV and PV panels in May is 46.7 kWh/m^2 and 38.7 kWh/m^2.

Figure 29 shows the comparison of the CPV and PV within four sample days of June. The total direct and diffuse radiation in June is 220.5 kW/m^2 and 62.2 kW/m^2, respectively. In this month on all sample days at 2 pm, the direct solar radiation is more than diffuse solar radiation. Hence, the output power of the CPV panel is more than the PV panel at all those moments.

The total output power of CPV and PV panels in June is 59.6 kWh/m^2 and 39.8 kWh/m^2.

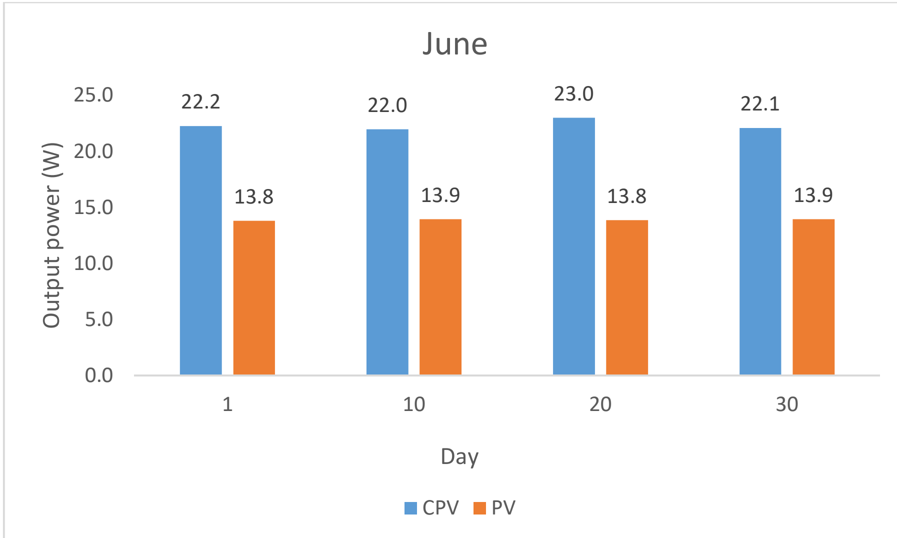


Figure 29: Comparison data between CPV and PV on June Sample days

It is obvious that in the spring, the amount of total direct solar radiation is higher than previous months. Therefore, the total output power of CPV panel and PV panel are more than those months.

The following figures show the output power of the proposed CPV panel and the conventional PV panel on the first day of each month. As it is mentioned before, the data is collected on an hourly basis.

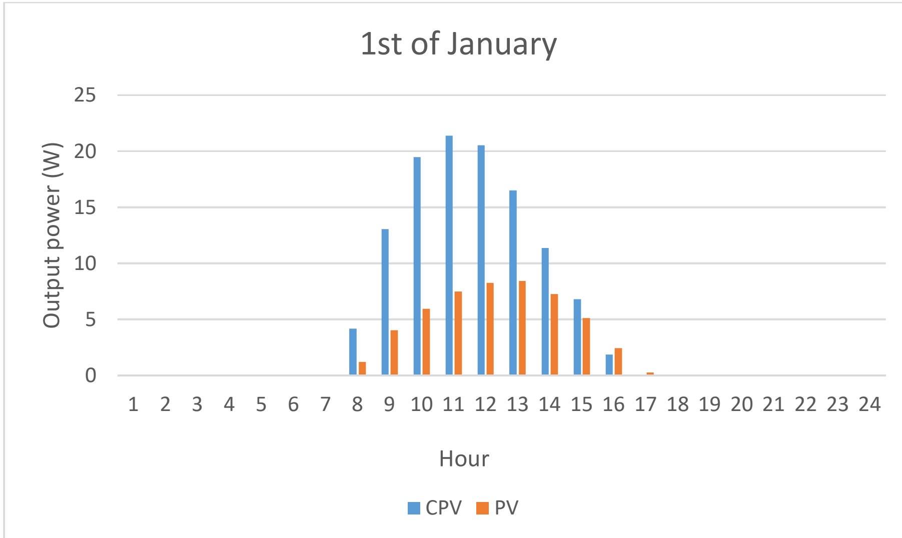


Figure 30: Comparison data between CPV and PV on January 1

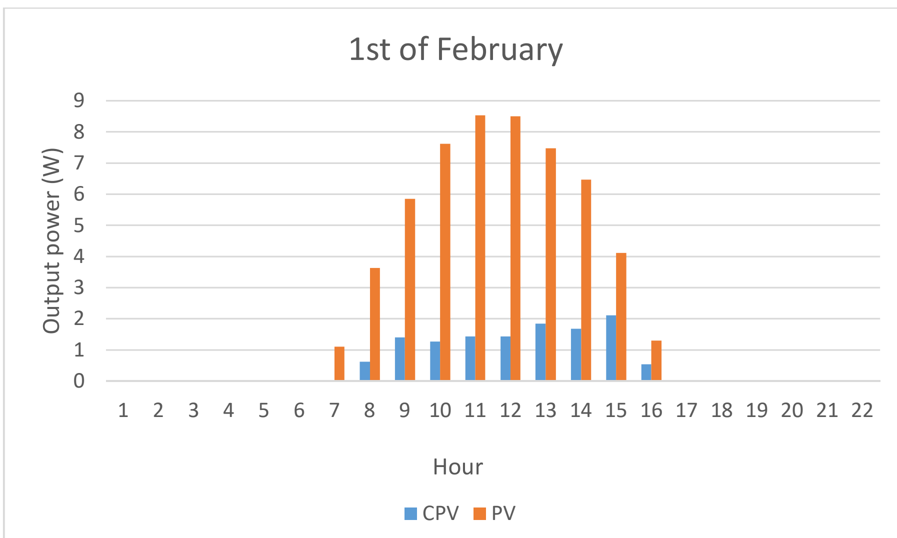


Figure 31: Comparison data between CPV and PV on February 1

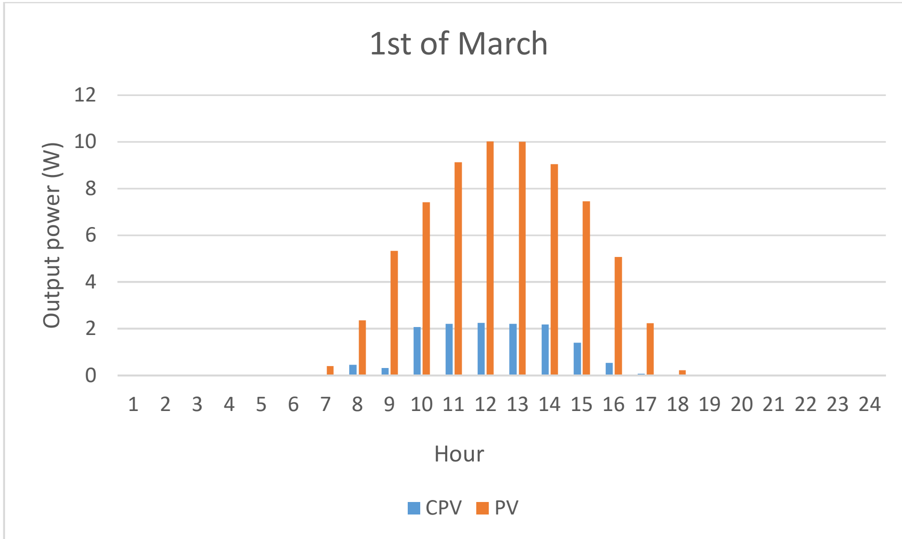


Figure 32: Comparison data between CPV and PV on March 1

As it is illustrated in fig 31 and fig 32, it seems that on February 1 and March 1 the output power of the PV panel is more than the CPV panel. It is mostly because of the cloudy day that occurred at those days and decreased the direct solar radiation.

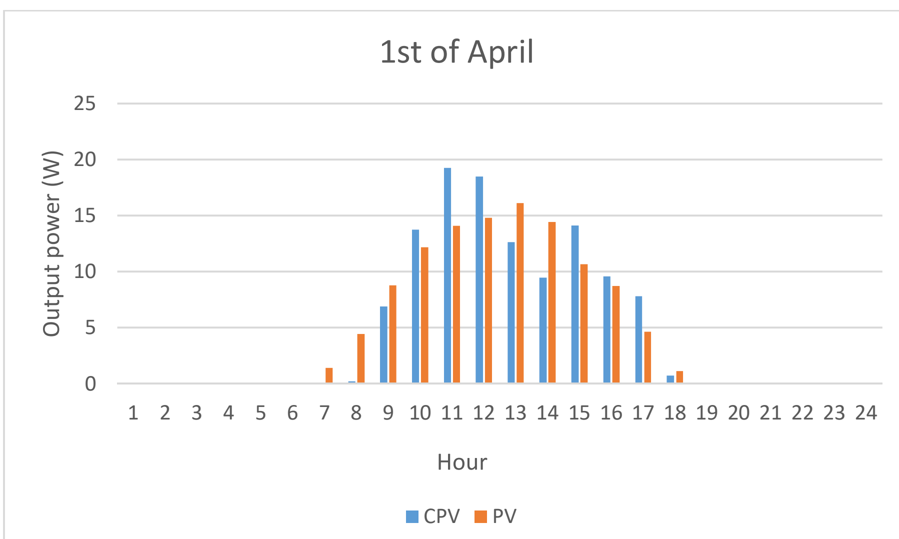


Figure 33: Comparison data between CPV and PV on April 1

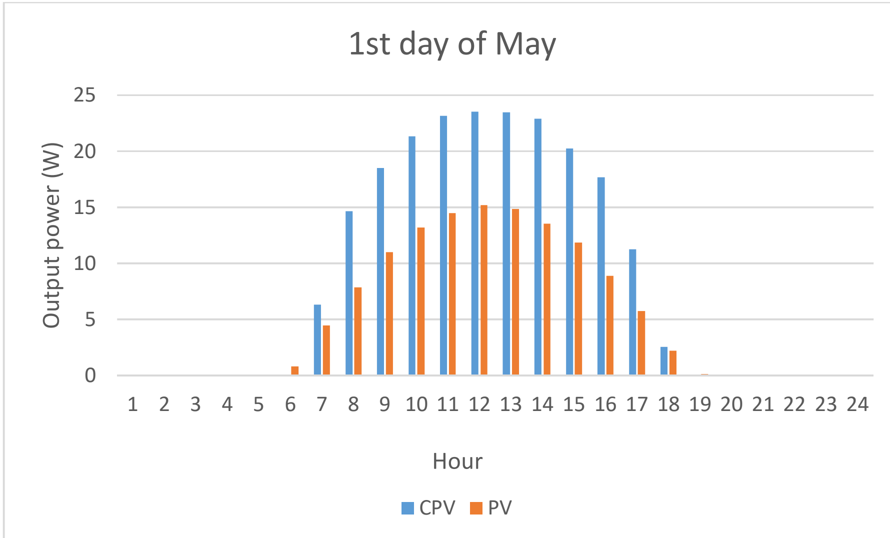


Figure 34: Comparison data between CPV and PV on May 1

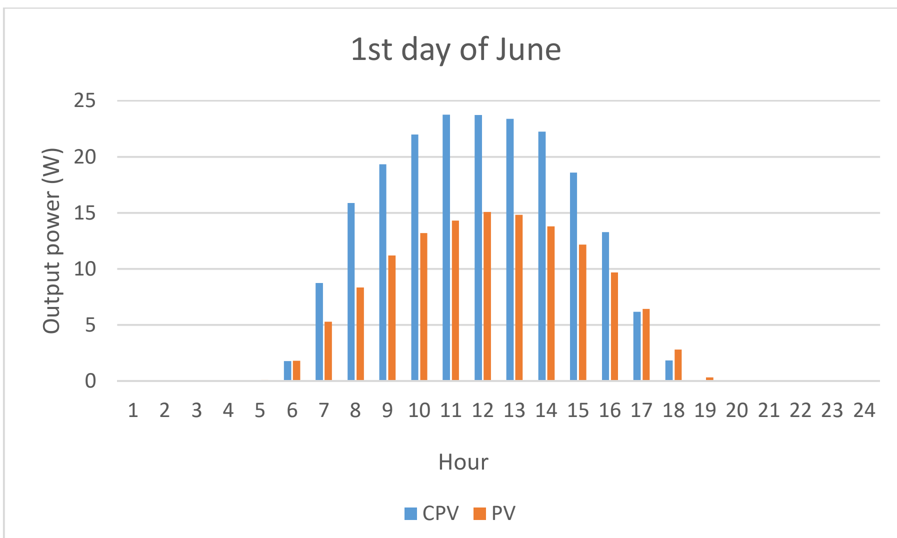


Figure 35: Comparison data between CPV and PV on June 1

Fig 33 to 35 show the output power of both panels in the springtime. It seems that the duration of collecting data is more than wintertime.

In addition, the maximum azimuth angle that is measured by the controller is 299.31° in June, which is the most angel compared to other month's maximum azimuth angle. Besides, the minimum azimuth angle that is 64.04° also occurs in June. This implies that in the sunny days, the interval of the azimuth angle is higher. In contrast, in the winter, the interval of the azimuth angle is lower than the spring. Moreover, the maximum elevation occurs in June, and the minimum elevation occurs in January. As a result, elevation and azimuth angles are increasing when the ambient temperature gets warmer.

As it is indicated in the figures, in the spring CPV solar panel generates more energy than PV solar panel since the solar radiation is more powerful. Moreover, the radiation should be perpendicular to CPV to have a maximum energy; otherwise, the energy reduces progressively. In the spring, the sunrise is sooner, as a result, the total energy in those days is more than the wintertime.

Chapter 6

CONCLUSION

In this study, we designed and constructed a dual axis tracker in order to analyze a two-stage CPV solar panel and a PV panel at the same time. The aim of this study was to build a dual axis solar tracker to compare the output energy of the CPV solar panel to the conventional PV solar panel in 6 months from January to June 2018.

The two-stage CPV solar panel that is implemented here is produced by a Fresnel lens as a primary lens and a prism lens as a secondary lens. A dual axis tracker has built to track both PV and CPV panels regarding azimuth and elevation angles at the same time.

The data table for each month is shown in the appendices. As it is concluded, the amount of direct solar radiation of February is the least, therefore, the output power of both panels are least in this month than the other months. As the climate gets warmer, the output power of both panels develops. As a result, the output power of both panels in June is the most among the other months in this study.

As it is exhibited in the tables, the total power produced by the proposed CPV panel is more than the produced power by the conventional PV panel, especially in the warmer days. However, in some days that could be cloudy days, the energy gained from PV panel is more than CPV panel. It is because of the working principle of the

CPV modules, that solar radiation should be perpendicular to the cell. Therefore, in a day with greater diffuse solar radiation rather than direct solar radiation, the energy produced by a PV panel is more than the energy produced by the CPV solar panel like February 1 and May 10.

On a hot spring day, the azimuth angle has its minimum and maximum value compared to other days. Furthermore, on those days, the elevation angle is more than colder days. It means that the direct solar radiation increases. Therefore, the CPV solar panel is able to produce more power.

6.1 Future work

Analyze the Levelized cost of energy (LCOE) is an important study which can explain the economic profits of every method. LCOE calculates lifetime costs divided by energy generation. By using this value, it is possible to comprise different technologies such as wind and solar energy.

One method to increase the efficiency of the CPV panel is applying MPPT method instead of a simple solar tracker. The MPPT is the control algorithm that settles the power interfaces automatically and delivers the most power accessible. By this way, it is possible to make the system to work with the maximum power at every moment. Different MPPT methods can show a different result.

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APPENDICES

Appendix A: Data for January

Month	Day	Hour	Global Radiation (W/m^2)	Direct Radiation (W/m^2)	Diffuse Radiation (W/m^2)	CPV (W)	PV (W)	Elevation (deg)	Azimuth (deg)
1	1	1	0	0	0	0	0	--	--
1	1	2	0	0	0	0	0	--	--
1	1	3	0	0	0	0	0	--	--
1	1	4	0	0	0	0	0	--	--
1	1	5	0	0	0	0	0	--	--
1	1	6	0	0	0	0	0	--	--
1	1	7	0	0	0	0	0	--	--
1	1	8	52	154	37	4.158	1.2015	0.13	118.64
1	1	9	213	484	85	13.068	4.023	10.38	127.92
1	1	10	364	721	77	19.467	5.9535	19.31	138.82
1	1	11	470	792	84	21.384	7.479	26.31	151.73
1	1	12	507	761	105	20.547	8.262	30.69	166.64
1	1	13	470	611	153	16.497	8.4105	31.84	182.74
1	1	14	365	421	172	11.367	7.2495	29.56	198.58
1	1	15	234	252	145	6.804	5.1165	24.22	212.87
1	1	16	97	69	83	1.863	2.43	16.5	225.08
1	1	17	10	0	10	0	0.27	7.07	235.38
1	1	18	0	0	0	0	0	--	--
1	1	19	0	0	0	0	0	--	--
1	1	20	0	0	0	0	0	--	--
1	1	21	0	0	0	0	0	--	--
1	1	22	0	0	0	0	0	--	--
1	1	23	0	0	0	0	0	--	--
1	1	24	0	0	0	0	0	--	--
1	2	1	0	0	0	0	0	--	--
1	2	2	0	0	0	0	0	--	--
1	2	3	0	0	0	0	0	--	--
1	2	4	0	0	0	0	0	--	--
1	2	5	0	0	0	0	0	--	--
1	2	6	0	0	0	0	0	--	--
1	2	7	0	0	0	0	0	--	--
1	2	8	27	0	27	0	0.729	0.09	118.51
1	2	9	113	18	108	0.486	2.9835	10.37	127.78
1	2	10	194	47	175	1.269	4.9815	19.32	138.68
1	2	11	252	45	230	1.215	6.507	26.35	151.58
1	2	12	395	260	257	7.02	8.802	30.75	166.5
1	2	13	456	534	179	14.418	8.5725	31.93	182.62
1	2	14	423	666	117	17.982	7.29	29.67	198.49
1	2	15	296	574	93	15.498	5.2515	24.35	212.81
1	2	16	140	357	66	9.639	2.781	16.63	225.05
1	2	17	18	0	18	0	0.486	7.2	235.38
1	2	18	0	0	0	0	0	--	--
1	2	19	0	0	0	0	0	--	--
1	2	20	0	0	0	0	0	--	--
1	2	21	0	0	0	0	0	--	--
1	2	22	0	0	0	0	0	--	--
1	2	23	0	0	0	0	0	--	--
1	2	24	0	0	0	0	0	--	--
1	3	1	0	0	0	0	0	--	--
1	3	2	0	0	0	0	0	--	--
1	3	3	0	0	0	0	0	--	--
1	3	4	0	0	0	0	0	--	--
1	3	5	0	0	0	0	0	--	--
1	3	6	0	0	0	0	0	--	--
1	3	7	0	0	0	0	0	--	--
1	3	8	27	0	27	0	0.729	0.07	118.37
1	3	9	114	19	108	0.513	2.997	10.36	127.64
1	3	10	195	48	176	1.296	5.0085	19.33	138.53
1	3	11	254	46	231	1.242	6.5475	26.39	151.43
1	3	12	282	48	256	1.296	7.263	30.82	166.35
1	3	13	276	48	251	1.296	7.1145	32.03	182.5
1	3	14	237	45	216	1.215	6.1155	29.79	198.41
1	3	15	207	145	156	3.915	4.9005	24.48	212.76
1	3	16	116	113	92	3.051	2.808	16.77	225.03
1	3	17	17	0	17	0	0.459	7.35	235.37
1	3	18	0	0	0	0	0	--	--
1	3	19	0	0	0	0	0	--	--
1	3	20	0	0	0	0	0	--	--
1	3	21	0	0	0	0	0	--	--
1	3	22	0	0	0	0	0	--	--
1	3	23	0	0	0	0	0	--	--
1	3	24	0	0	0	0	0	--	--
1	4	1	0	0	0	0	0	--	--
1	4	2	0	0	0	0	0	--	--

1	4	3	0	0	0	0	0	--	--
1	4	4	0	0	0	0	0	--	--
1	4	5	0	0	0	0	0	--	--
1	4	6	0	0	0	0	0	--	--
1	4	7	0	0	0	0	0	--	--
1	4	8	15	0	15	0	0.405	0.05	118.23
1	4	9	64	0	64	0	1.728	10.36	127.49
1	4	10	110	0	110	0	2.97	19.35	138.37
1	4	11	143	0	143	0	3.861	26.43	151.28
1	4	12	159	0	159	0	4.293	30.9	166.21
1	4	13	155	0	155	0	4.185	32.13	182.38
1	4	14	133	0	133	0	3.591	29.92	198.32
1	4	15	95	0	95	0	2.565	24.63	212.71
1	4	16	46	0	46	0	1.242	16.92	225.01
1	4	17	6	0	6	0	0.162	7.5	235.38
1	4	18	0	0	0	0	0	--	--
1	4	19	0	0	0	0	0	--	--
1	4	20	0	0	0	0	0	--	--
1	4	21	0	0	0	0	0	--	--
1	4	22	0	0	0	0	0	--	--
1	4	23	0	0	0	0	0	--	--
1	4	24	0	0	0	0	0	--	--
1	5	1	0	0	0	0	0	--	--
1	5	2	0	0	0	0	0	--	--
1	5	3	0	0	0	0	0	--	--
1	5	4	0	0	0	0	0	--	--
1	5	5	0	0	0	0	0	--	--
1	5	6	0	0	0	0	0	--	--
1	5	7	0	0	0	0	0	--	--
1	5	8	27	0	27	0	0.729	0.04	118.08
1	5	9	127	62	110	1.674	3.1995	10.36	127.34
1	5	10	240	142	183	3.834	5.7105	19.38	138.21
1	5	11	337	207	235	5.589	7.722	26.49	151.12
1	5	12	374	147	296	3.969	9.045	30.99	166.06
1	5	13	367	146	291	3.942	8.883	32.25	182.26
1	5	14	238	69	206	1.863	5.994	30.06	198.24
1	5	15	170	46	154	1.242	4.374	24.77	212.67
1	5	16	84	8	82	0.216	2.241	17.07	225
1	5	17	12	0	12	0	0.324	7.65	235.39
1	5	18	0	0	0	0	0	--	--
1	5	19	0	0	0	0	0	--	--
1	5	20	0	0	0	0	0	--	--
1	5	21	0	0	0	0	0	--	--
1	5	22	0	0	0	0	0	--	--
1	5	23	0	0	0	0	0	--	--
1	5	24	0	0	0	0	0	--	--
1	6	1	0	0	0	0	0	--	--
1	6	2	0	0	0	0	0	--	--
1	6	3	0	0	0	0	0	--	--
1	6	4	0	0	0	0	0	--	--
1	6	5	0	0	0	0	0	--	--
1	6	6	0	0	0	0	0	--	--
1	6	7	0	0	0	0	0	--	--
1	6	8	51	151	36	4.077	1.1745	0.03	117.92
1	6	9	214	488	84	13.176	4.023	10.37	127.18
1	6	10	369	735	75	19.845	5.994	19.41	138.05
1	6	11	480	814	80	21.978	7.56	26.55	150.96
1	6	12	535	842	84	22.734	8.3565	31.08	165.92
1	6	13	526	841	83	22.707	8.2215	32.37	182.14
1	6	14	454	808	76	21.816	7.155	30.2	198.17
1	6	15	325	698	73	18.846	5.373	24.92	212.63
1	6	16	161	481	57	12.987	2.943	17.23	224.99
1	6	17	24	0	24	0	0.648	7.8	235.41
1	6	18	0	0	0	0	0	--	--
1	6	19	0	0	0	0	0	--	--
1	6	20	0	0	0	0	0	--	--
1	6	21	0	0	0	0	0	--	--
1	6	22	0	0	0	0	0	--	--
1	6	23	0	0	0	0	0	--	--
1	6	24	0	0	0	0	0	--	--
1	7	1	0	0	0	0	0	--	--
1	7	2	0	0	0	0	0	--	--
1	7	3	0	0	0	0	0	--	--
1	7	4	0	0	0	0	0	--	--
1	7	5	0	0	0	0	0	--	--
1	7	6	0	0	0	0	0	--	--
1	7	7	0	0	0	0	0	--	--
1	7	8	51	152	36	4.104	1.1745	0.03	117.76
1	7	9	215	490	84	13.23	4.0365	10.39	127.02
1	7	10	370	737	75	19.899	6.0075	19.45	137.89
1	7	11	482	816	80	22.032	7.587	26.62	150.8

1	7	12	535	839	86	22.653	8.3835	31.18	165.77
1	7	13	525	832	85	22.464	8.235	32.5	182.03
1	7	14	452	794	79	21.438	7.1685	30.35	198.1
1	7	15	326	687	75	18.549	5.4135	25.08	212.6
1	7	16	163	478	58	12.906	2.9835	17.39	224.99
1	7	17	24	2	24	0.054	0.648	7.96	235.43
1	7	18	0	0	0	0	0	--	--
1	7	19	0	0	0	0	0	--	--
1	7	20	0	0	0	0	0	--	--
1	7	21	0	0	0	0	0	--	--
1	7	22	0	0	0	0	0	--	--
1	7	23	0	0	0	0	0	--	--
1	7	24	0	0	0	0	0	--	--
1	8	1	0	0	0	0	0	--	--
1	8	2	0	0	0	0	0	--	--
1	8	3	0	0	0	0	0	--	--
1	8	4	0	0	0	0	0	--	--
1	8	5	0	0	0	0	0	--	--
1	8	6	0	0	0	0	0	--	--
1	8	7	0	0	0	0	0	--	--
1	8	8	52	154	36	4.158	1.188	0.03	117.6
1	8	9	215	490	84	13.23	4.0365	10.41	126.85
1	8	10	370	731	76	19.737	6.021	19.5	137.72
1	8	11	481	825	73	22.275	7.479	26.7	150.64
1	8	12	535	849	78	22.923	8.2755	31.29	165.62
1	8	13	525	843	77	22.761	8.127	32.63	181.92
1	8	14	453	803	73	21.681	7.101	30.5	198.03
1	8	15	326	702	68	18.954	5.319	25.25	212.58
1	8	16	164	481	57	12.987	2.9835	17.55	225
1	8	17	25	9	25	0.243	0.675	8.12	235.46
1	8	18	0	0	0	0	0	--	--
1	8	19	0	0	0	0	0	--	--
1	8	20	0	0	0	0	0	--	--
1	8	21	0	0	0	0	0	--	--
1	8	22	0	0	0	0	0	--	--
1	8	23	0	0	0	0	0	--	--
1	8	24	0	0	0	0	0	--	--
1	9	1	0	0	0	0	0	--	--
1	9	2	0	0	0	0	0	--	--
1	9	3	0	0	0	0	0	--	--
1	9	4	0	0	0	0	0	--	--
1	9	5	0	0	0	0	0	--	--
1	9	6	0	0	0	0	0	--	--
1	9	7	0	0	0	0	0	--	--
1	9	8	50	133	37	3.591	1.1745	0.04	117.43
1	9	9	191	391	87	10.557	3.753	10.44	126.69
1	9	10	278	268	171	7.236	6.0615	19.55	137.55
1	9	11	256	69	222	1.863	6.453	26.78	150.47
1	9	12	286	46	260	1.242	7.371	31.4	165.48
1	9	13	281	46	256	1.242	7.2495	32.77	181.81
1	9	14	244	44	222	1.188	6.291	30.66	197.97
1	9	15	176	46	159	1.242	4.5225	25.42	212.56
1	9	16	89	9	87	0.243	2.376	17.72	225.01
1	9	17	14	0	14	0	0.378	8.29	235.5
1	9	18	0	0	0	0	0	--	--
1	9	19	0	0	0	0	0	--	--
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1	9	22	0	0	0	0	0	--	--
1	9	23	0	0	0	0	0	--	--
1	9	24	0	0	0	0	0	--	--
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1	10	2	0	0	0	0	0	--	--
1	10	3	0	0	0	0	0	--	--
1	10	4	0	0	0	0	0	--	--
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1	10	6	0	0	0	0	0	--	--
1	10	7	0	0	0	0	0	--	--
1	10	8	27	0	27	0	0.729	0.06	117.26
1	10	9	128	62	112	1.674	3.24	10.48	126.51
1	10	10	242	141	185	3.807	5.7645	19.61	137.38
1	10	11	342	206	239	5.562	7.8435	26.87	150.3
1	10	12	428	360	234	9.72	8.937	31.52	165.33
1	10	13	459	496	193	13.392	8.802	32.92	181.7
1	10	14	421	612	129	16.524	7.425	30.83	197.91
1	10	15	322	623	91	16.821	5.5755	25.59	212.54
1	10	16	169	467	63	12.609	3.132	17.9	225.03
1	10	17	27	41	25	1.107	0.702	8.46	235.54
1	10	18	0	0	0	0	0	--	--
1	10	19	0	0	0	0	0	--	--
1	10	20	0	0	0	0	0	--	--

1	10	21	0	0	0	0	0	--	--
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1	10	23	0	0	0	0	0	--	--
1	10	24	0	0	0	0	0	--	--
1	11	1	0	0	0	0	0	--	--
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1	11	3	0	0	0	0	0	--	--
1	11	4	0	0	0	0	0	--	--
1	11	5	0	0	0	0	0	--	--
1	11	6	0	0	0	0	0	--	--
1	11	7	0	0	0	0	0	--	--
1	11	8	37	17	35	0.459	0.972	0.08	117.08
1	11	9	141	80	120	2.16	3.5235	10.52	126.34
1	11	10	222	80	189	2.16	5.5485	19.68	137.2
1	11	11	259	65	226	1.755	6.5475	26.97	150.14
1	11	12	250	8	245	0.216	6.6825	31.65	165.18
1	11	13	205	3	204	0.081	5.5215	33.08	181.59
1	11	14	139	0	139	0	3.753	31	197.85
1	11	15	130	0	130	0	3.51	25.77	212.53
1	11	16	80	0	80	0	2.16	18.08	225.06
1	11	17	15	0	15	0	0.405	8.63	235.59
1	11	18	0	0	0	0	0	--	--
1	11	19	0	0	0	0	0	--	--
1	11	20	0	0	0	0	0	--	--
1	11	21	0	0	0	0	0	--	--
1	11	22	0	0	0	0	0	--	--
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1	12	4	0	0	0	0	0	--	--
1	12	5	0	0	0	0	0	--	--
1	12	6	0	0	0	0	0	--	--
1	12	7	0	0	0	0	0	--	--
1	12	8	44	63	37	1.701	1.0935	0.11	116.9
1	12	9	187	344	95	9.288	3.807	10.57	126.16
1	12	10	333	489	135	13.203	6.318	19.75	137.03
1	12	11	446	623	135	16.821	7.8435	27.07	149.96
1	12	12	509	692	131	18.684	8.64	31.79	165.04
1	12	13	511	732	116	19.764	8.4645	33.24	181.49
1	12	14	451	731	98	19.737	7.4115	31.18	197.8
1	12	15	324	601	97	16.227	5.6835	25.95	212.53
1	12	16	165	400	72	10.8	3.1995	18.26	225.09
1	12	17	27	42	25	1.134	0.702	8.81	235.64
1	12	18	0	0	0	0	0	--	--
1	12	19	0	0	0	0	0	--	--
1	12	20	0	0	0	0	0	--	--
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1	13	4	0	0	0	0	0	--	--
1	13	5	0	0	0	0	0	--	--
1	13	6	0	0	0	0	0	--	--
1	13	7	0	0	0	0	0	--	--
1	13	8	51	139	37	3.753	1.188	0.14	116.71
1	13	9	200	431	84	11.637	3.834	10.62	125.97
1	13	10	313	394	152	10.638	6.2775	19.83	136.84
1	13	11	347	222	235	5.994	7.857	27.18	149.79
1	13	12	436	364	236	9.828	9.072	31.93	164.89
1	13	13	468	506	193	13.662	8.9235	33.41	181.39
1	13	14	432	591	145	15.957	7.7895	31.37	197.75
1	13	15	307	497	118	13.419	5.7375	26.14	212.53
1	13	16	156	316	81	8.532	3.1995	18.45	225.13
1	13	17	26	18	24	0.486	0.675	8.99	235.71
1	13	18	0	0	0	0	0	--	--
1	13	19	0	0	0	0	0	--	--
1	13	20	0	0	0	0	0	--	--
1	13	21	0	0	0	0	0	--	--
1	13	22	0	0	0	0	0	--	--
1	13	23	0	0	0	0	0	--	--
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1	14	2	0	0	0	0	0	--	--
1	14	3	0	0	0	0	0	--	--
1	14	4	0	0	0	0	0	--	--
1	14	5	0	0	0	0	0	--	--

1	14	6	0	0	0	0	0	--	--
1	14	7	0	0	0	0	0	--	--
1	14	8	29	0	29	0	0.783	0.18	116.52
1	14	9	117	20	112	0.54	3.0915	10.68	125.78
1	14	10	202	49	182	1.323	5.184	19.92	136.66
1	14	11	263	46	240	1.242	6.7905	27.3	149.62
1	14	12	255	9	250	0.243	6.8175	32.08	164.75
1	14	13	210	3	208	0.081	5.643	33.59	181.29
1	14	14	143	0	143	0	3.861	31.56	197.71
1	14	15	135	1	134	0.027	3.6315	26.34	212.54
1	14	16	85	1	85	0.027	2.295	18.64	225.17
1	14	17	17	0	17	0	0.459	9.17	235.78
1	14	18	0	0	0	0	0	--	--
1	14	19	0	0	0	0	0	--	--
1	14	20	0	0	0	0	0	--	--
1	14	21	0	0	0	0	0	--	--
1	14	22	0	0	0	0	0	--	--
1	14	23	0	0	0	0	0	--	--
1	14	24	0	0	0	0	0	--	--
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1	15	2	0	0	0	0	0	--	--
1	15	3	0	0	0	0	0	--	--
1	15	4	0	0	0	0	0	--	--
1	15	5	0	0	0	0	0	--	--
1	15	6	0	0	0	0	0	--	--
1	15	7	0	0	0	0	0	--	--
1	15	8	39	23	36	0.621	1.0125	0.22	116.33
1	15	9	146	87	123	2.349	3.6315	10.75	125.59
1	15	10	229	86	194	2.322	5.7105	20.01	136.47
1	15	11	267	70	232	1.89	6.7365	27.42	149.44
1	15	12	298	50	271	1.35	7.6815	32.24	164.6
1	15	13	294	49	267	1.323	7.5735	33.77	181.2
1	15	14	257	47	233	1.269	6.615	31.76	197.67
1	15	15	251	208	171	5.616	5.697	26.54	212.55
1	15	16	157	298	85	8.046	3.267	18.83	225.22
1	15	17	31	77	26	2.079	0.7695	9.36	235.85
1	15	18	0	0	0	0	0	--	--
1	15	19	0	0	0	0	0	--	--
1	15	20	0	0	0	0	0	--	--
1	15	21	0	0	0	0	0	--	--
1	15	22	0	0	0	0	0	--	--
1	15	23	0	0	0	0	0	--	--
1	15	24	0	0	0	0	0	--	--
1	16	1	0	0	0	0	0	--	--
1	16	2	0	0	0	0	0	--	--
1	16	3	0	0	0	0	0	--	--
1	16	4	0	0	0	0	0	--	--
1	16	5	0	0	0	0	0	--	--
1	16	6	0	0	0	0	0	--	--
1	16	7	0	0	0	0	0	--	--
1	16	8	30	0	30	0	0.81	0.28	116.13
1	16	9	171	180	121	4.86	3.942	10.82	125.4
1	16	10	347	443	164	11.961	6.8985	20.11	136.28
1	16	11	490	689	140	18.603	8.505	27.56	149.27
1	16	12	518	607	181	16.389	9.4365	32.4	164.46
1	16	13	464	389	250	10.503	9.639	33.96	181.1
1	16	14	344	232	230	6.264	7.749	31.96	197.64
1	16	15	299	389	148	10.503	6.0345	26.74	212.57
1	16	16	177	409	77	11.043	3.429	19.03	225.28
1	16	17	34	104	27	2.808	0.8235	9.55	235.94
1	16	18	0	0	0	0	0	--	--
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1	16	20	0	0	0	0	0	--	--
1	16	21	0	0	0	0	0	--	--
1	16	22	0	0	0	0	0	--	--
1	16	23	0	0	0	0	0	--	--
1	16	24	0	0	0	0	0	--	--
1	17	1	0	0	0	0	0	--	--
1	17	2	0	0	0	0	0	--	--
1	17	3	0	0	0	0	0	--	--
1	17	4	0	0	0	0	0	--	--
1	17	5	0	0	0	0	0	--	--
1	17	6	0	0	0	0	0	--	--
1	17	7	0	0	0	0	0	--	--
1	17	8	56	163	39	4.401	1.2825	0.33	115.93
1	17	9	227	480	95	12.96	4.347	10.9	125.2
1	17	10	390	759	76	20.493	6.291	20.22	136.09
1	17	11	510	846	78	22.842	7.938	27.69	149.09
1	17	12	570	871	84	23.517	8.829	32.57	164.31
1	17	13	564	870	83	23.49	8.7345	34.16	181.01
1	17	14	494	840	76	22.68	7.695	32.17	197.61

1	17	15	365	740	74	19.98	5.9265	26.95	212.6
1	17	16	197	556	59	15.012	3.456	19.23	225.35
1	17	17	36	136	26	3.672	0.837	9.74	236.03
1	17	18	0	0	0	0	0	--	--
1	17	19	0	0	0	0	0	--	--
1	17	20	0	0	0	0	0	--	--
1	17	21	0	0	0	0	0	--	--
1	17	22	0	0	0	0	0	--	--
1	17	23	0	0	0	0	0	--	--
1	17	24	0	0	0	0	0	--	--
1	18	1	0	0	0	0	0	--	--
1	18	2	0	0	0	0	0	--	--
1	18	3	0	0	0	0	0	--	--
1	18	4	0	0	0	0	0	--	--
1	18	5	0	0	0	0	0	--	--
1	18	6	0	0	0	0	0	--	--
1	18	7	0	0	0	0	0	--	--
1	18	8	58	168	40	4.536	1.323	0.4	115.73
1	18	9	229	485	95	13.095	4.374	10.99	125
1	18	10	393	761	76	20.547	6.3315	20.33	135.9
1	18	11	512	845	79	22.815	7.9785	27.84	148.91
1	18	12	572	870	84	23.49	8.856	32.75	164.17
1	18	13	567	868	84	23.436	8.7885	34.36	180.92
1	18	14	496	837	77	22.599	7.7355	32.38	197.59
1	18	15	368	753	70	20.331	5.913	27.17	212.63
1	18	16	200	560	59	15.12	3.4965	19.44	225.42
1	18	17	38	134	27	3.618	0.8775	9.93	236.12
1	18	18	0	0	0	0	0	-0.76	245.28
1	18	19	0	0	0	0	0	--	--
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1	18	21	0	0	0	0	0	--	--
1	18	22	0	0	0	0	0	--	--
1	18	23	0	0	0	0	0	--	--
1	18	24	0	0	0	0	0	--	--
1	19	1	0	0	0	0	0	--	--
1	19	2	0	0	0	0	0	--	--
1	19	3	0	0	0	0	0	--	--
1	19	4	0	0	0	0	0	--	--
1	19	5	0	0	0	0	0	--	--
1	19	6	0	0	0	0	0	--	--
1	19	7	0	0	0	0	0	--	--
1	19	8	58	175	39	4.725	1.3095	0.47	115.52
1	19	9	230	513	86	13.851	4.266	11.08	124.8
1	19	10	393	760	75	20.52	6.318	20.45	135.7
1	19	11	511	836	81	22.572	7.992	27.99	148.73
1	19	12	570	855	88	23.085	8.883	32.93	164.02
1	19	13	562	846	89	22.842	8.7885	34.57	180.84
1	19	14	490	805	85	21.735	7.7625	32.6	197.57
1	19	15	350	597	111	16.119	6.2235	27.38	212.67
1	19	16	173	328	90	8.856	3.5505	19.64	225.49
1	19	17	27	0	27	0	0.729	10.13	236.23
1	19	18	0	0	0	0	0	-0.57	245.4
1	19	19	0	0	0	0	0	--	--
1	19	20	0	0	0	0	0	--	--
1	19	21	0	0	0	0	0	--	--
1	19	22	0	0	0	0	0	--	--
1	19	23	0	0	0	0	0	--	--
1	19	24	0	0	0	0	0	--	--
1	20	1	0	0	0	0	0	--	--
1	20	2	0	0	0	0	0	--	--
1	20	3	0	0	0	0	0	--	--
1	20	4	0	0	0	0	0	--	--
1	20	5	0	0	0	0	0	--	--
1	20	6	0	0	0	0	0	--	--
1	20	7	0	0	0	0	0	--	--
1	20	8	31	0	31	0	0.837	0.54	115.31
1	20	9	122	21	116	0.567	3.213	11.18	124.59
1	20	10	209	50	188	1.35	5.3595	20.58	135.5
1	20	11	272	47	248	1.269	7.02	28.15	148.55
1	20	12	341	113	277	3.051	8.343	33.13	163.88
1	20	13	372	164	280	4.428	8.802	34.78	180.76
1	20	14	353	215	244	5.805	8.0595	32.83	197.56
1	20	15	222	106	180	2.862	5.427	27.61	212.72
1	20	16	95	4	94	0.108	2.5515	19.86	225.58
1	20	17	12	0	12	0	0.324	10.33	236.34
1	20	18	0	0	0	0	0	-0.39	245.53
1	20	19	0	0	0	0	0	--	--
1	20	20	0	0	0	0	0	--	--
1	20	21	0	0	0	0	0	--	--
1	20	22	0	0	0	0	0	--	--
1	20	23	0	0	0	0	0	--	--

1	20	24	0	0	0	0	0	--	--
1	21	1	0	0	0	0	0	--	--
1	21	2	0	0	0	0	0	--	--
1	21	3	0	0	0	0	0	--	--
1	21	4	0	0	0	0	0	--	--
1	21	5	0	0	0	0	0	--	--
1	21	6	0	0	0	0	0	--	--
1	21	7	0	0	0	0	0	--	--
1	21	8	32	0	32	0	0.864	0.62	115.09
1	21	9	151	100	122	2.7	3.6855	11.28	124.39
1	21	10	296	272	181	7.344	6.4395	20.71	135.3
1	21	11	425	427	203	11.529	8.478	28.32	148.37
1	21	12	454	391	232	10.557	9.261	33.32	163.74
1	21	13	427	323	245	8.721	9.072	35	180.68
1	21	14	352	207	247	5.589	8.0865	33.06	197.55
1	21	15	263	130	211	3.51	6.399	27.83	212.77
1	21	16	146	157	105	4.239	3.3885	20.07	225.67
1	21	17	29	0	29	0	0.783	10.53	236.45
1	21	18	0	0	0	0	0	-0.2	245.66
1	21	19	0	0	0	0	0	--	--
1	21	20	0	0	0	0	0	--	--
1	21	21	0	0	0	0	0	--	--
1	21	22	0	0	0	0	0	--	--
1	21	23	0	0	0	0	0	--	--
1	21	24	0	0	0	0	0	--	--
1	22	1	0	0	0	0	0	--	--
1	22	2	0	0	0	0	0	--	--
1	22	3	0	0	0	0	0	--	--
1	22	4	0	0	0	0	0	--	--
1	22	5	0	0	0	0	0	--	--
1	22	6	0	0	0	0	0	--	--
1	22	7	0	0	0	0	0	--	--
1	22	8	50	73	42	1.971	1.242	0.71	114.88
1	22	9	207	386	96	10.422	4.0905	11.39	124.17
1	22	10	369	569	127	15.363	6.696	20.85	135.1
1	22	11	496	739	109	19.953	8.1675	28.49	148.19
1	22	12	511	608	163	16.416	9.099	33.53	163.6
1	22	13	428	293	262	7.911	9.315	35.23	180.6
1	22	14	266	69	231	1.863	6.7095	33.3	197.55
1	22	15	200	17	193	0.459	5.3055	28.06	212.82
1	22	16	111	15	107	0.405	2.943	20.29	225.77
1	22	17	23	0	23	0	0.621	10.73	236.58
1	22	18	0	0	0	0	0	-0.01	245.8
1	22	19	0	0	0	0	0	--	--
1	22	20	0	0	0	0	0	--	--
1	22	21	0	0	0	0	0	--	--
1	22	22	0	0	0	0	0	--	--
1	22	23	0	0	0	0	0	--	--
1	22	24	0	0	0	0	0	--	--
1	23	1	0	0	0	0	0	--	--
1	23	2	0	0	0	0	0	--	--
1	23	3	0	0	0	0	0	--	--
1	23	4	0	0	0	0	0	--	--
1	23	5	0	0	0	0	0	--	--
1	23	6	0	0	0	0	0	--	--
1	23	7	0	0	0	0	0	--	--
1	23	8	33	0	33	0	0.891	0.81	114.66
1	23	9	124	20	119	0.54	3.2805	11.51	123.96
1	23	10	211	49	191	1.323	5.427	21	134.89
1	23	11	275	45	251	1.215	7.101	28.67	148
1	23	12	307	85	258	2.295	7.6275	33.74	163.46
1	23	13	306	47	279	1.269	7.8975	35.46	180.53
1	23	14	269	45	246	1.215	6.9525	33.54	197.55
1	23	15	203	50	182	1.35	5.1975	28.3	212.89
1	23	16	114	13	110	0.351	3.024	20.51	225.87
1	23	17	24	0	24	0	0.648	10.94	236.71
1	23	18	0	0	0	0	0	0.18	245.95
1	23	19	0	0	0	0	0	--	--
1	23	20	0	0	0	0	0	--	--
1	23	21	0	0	0	0	0	--	--
1	23	22	0	0	0	0	0	--	--
1	23	23	0	0	0	0	0	--	--
1	23	24	0	0	0	0	0	--	--
1	24	1	0	0	0	0	0	--	--
1	24	2	0	0	0	0	0	--	--
1	24	3	0	0	0	0	0	--	--
1	24	4	0	0	0	0	0	--	--
1	24	5	0	0	0	0	0	--	--
1	24	6	0	0	0	0	0	--	--
1	24	7	0	0	0	0	0	--	--
1	24	8	44	27	41	0.729	1.1475	0.91	114.43

1	24	9	154	123	119	3.321	3.6855	11.63	123.74
1	24	10	238	80	203	2.16	5.9535	21.15	134.69
1	24	11	276	67	241	1.809	6.9795	28.85	147.82
1	24	12	308	70	268	1.89	7.776	33.95	163.32
1	24	13	307	70	266	1.89	7.7355	35.7	180.46
1	24	14	271	47	246	1.269	6.9795	33.78	197.56
1	24	15	204	17	197	0.459	5.4135	28.54	212.96
1	24	16	115	13	112	0.351	3.0645	20.73	225.98
1	24	17	25	0	25	0	0.675	11.15	236.84
1	24	18	0	0	0	0	0	0.38	246.11
1	24	19	0	0	0	0	0	--	--
1	24	20	0	0	0	0	0	--	--
1	24	21	0	0	0	0	0	--	--
1	24	22	0	0	0	0	0	--	--
1	24	23	0	0	0	0	0	--	--
1	24	24	0	0	0	0	0	--	--
1	25	1	0	0	0	0	0	--	--
1	25	2	0	0	0	0	0	--	--
1	25	3	0	0	0	0	0	--	--
1	25	4	0	0	0	0	0	--	--
1	25	5	0	0	0	0	0	--	--
1	25	6	0	0	0	0	0	--	--
1	25	7	1	0	1	0	0	--	--
1	25	8	59	129	43	3.483	1.377	1.01	114.21
1	25	9	234	472	96	12.744	4.455	11.76	123.53
1	25	10	404	705	99	19.035	6.7905	21.31	134.48
1	25	11	435	410	217	11.07	8.802	29.04	147.63
1	25	12	553	655	172	17.685	9.7875	34.18	163.18
1	25	13	579	781	127	21.087	9.531	35.95	180.39
1	25	14	427	408	213	11.016	8.64	34.03	197.57
1	25	15	322	350	175	9.45	6.7095	28.78	213.03
1	25	16	183	298	101	8.046	3.834	20.96	226.1
1	25	17	41	45	37	1.215	1.053	11.35	236.99
1	25	18	0	0	0	0	0	0.57	246.27
1	25	19	0	0	0	0	0	--	--
1	25	20	0	0	0	0	0	--	--
1	25	21	0	0	0	0	0	--	--
1	25	22	0	0	0	0	0	--	--
1	25	23	0	0	0	0	0	--	--
1	25	24	0	0	0	0	0	--	--
1	26	1	0	0	0	0	0	--	--
1	26	2	0	0	0	0	0	--	--
1	26	3	0	0	0	0	0	--	--
1	26	4	0	0	0	0	0	--	--
1	26	5	0	0	0	0	0	--	--
1	26	6	0	0	0	0	0	--	--
1	26	7	1	0	1	0	0	--	--
1	26	8	60	132	44	3.564	1.404	1.12	113.98
1	26	9	214	391	99	10.557	4.2255	11.89	123.3
1	26	10	351	407	174	10.989	7.0875	21.47	134.27
1	26	11	439	388	231	10.476	9.045	29.24	147.45
1	26	12	553	642	177	17.334	9.855	34.41	163.04
1	26	13	580	772	130	20.844	9.585	36.2	180.33
1	26	14	522	827	85	22.329	8.1945	34.29	197.59
1	26	15	395	743	79	20.061	6.399	29.03	213.12
1	26	16	226	569	66	15.363	3.942	21.19	226.22
1	26	17	53	157	36	4.239	1.2015	11.57	237.14
1	26	18	0	0	0	0	0	0.76	246.43
1	26	19	0	0	0	0	0	--	--
1	26	20	0	0	0	0	0	--	--
1	26	21	0	0	0	0	0	--	--
1	26	22	0	0	0	0	0	--	--
1	26	23	0	0	0	0	0	--	--
1	26	24	0	0	0	0	0	--	--
1	27	1	0	0	0	0	0	--	--
1	27	2	0	0	0	0	0	--	--
1	27	3	0	0	0	0	0	--	--
1	27	4	0	0	0	0	0	--	--
1	27	5	0	0	0	0	0	--	--
1	27	6	0	0	0	0	0	--	--
1	27	7	1	0	1	0	0	--	--
1	27	8	36	0	36	0	0.972	1.24	113.74
1	27	9	182	215	118	5.805	4.05	12.03	123.08
1	27	10	363	473	156	12.771	7.0065	21.64	134.06
1	27	11	511	697	136	18.819	8.7345	29.44	147.26
1	27	12	554	691	147	18.657	9.4635	34.64	162.91
1	27	13	526	579	186	15.633	9.612	36.46	180.27
1	27	14	434	424	209	11.448	8.6805	34.55	197.61
1	27	15	329	350	179	9.45	6.858	29.27	213.21
1	27	16	189	306	102	8.262	3.9285	21.42	226.35
1	27	17	45	70	38	1.89	1.1205	11.78	237.29

1	27	18	0	0	0	0	0	0.96	246.61
1	27	19	0	0	0	0	0	--	--
1	27	20	0	0	0	0	0	--	--
1	27	21	0	0	0	0	0	--	--
1	27	22	0	0	0	0	0	--	--
1	27	23	0	0	0	0	0	--	--
1	27	24	0	0	0	0	0	--	--
1	28	1	0	0	0	0	0	--	--
1	28	2	0	0	0	0	0	--	--
1	28	3	0	0	0	0	0	--	--
1	28	4	0	0	0	0	0	--	--
1	28	5	0	0	0	0	0	--	--
1	28	6	0	0	0	0	0	--	--
1	28	7	1	0	1	0	0	--	--
1	28	8	66	164	46	4.428	1.512	1.36	113.51
1	28	9	239	466	100	12.582	4.5765	12.18	122.86
1	28	10	405	676	107	18.252	6.912	21.82	133.84
1	28	11	530	798	98	21.546	8.478	29.65	147.07
1	28	12	588	833	95	22.491	9.2205	34.88	162.77
1	28	13	581	814	101	21.978	9.207	36.72	180.22
1	28	14	509	746	110	20.142	8.3565	34.81	197.64
1	28	15	395	714	87	19.278	6.507	29.53	213.3
1	28	16	232	553	73	14.931	4.1175	21.65	226.49
1	28	17	58	174	39	4.698	1.3095	11.99	237.45
1	28	18	0	0	0	0	0	1.16	246.79
1	28	19	0	0	0	0	0	--	--
1	28	20	0	0	0	0	0	--	--
1	28	21	0	0	0	0	0	--	--
1	28	22	0	0	0	0	0	--	--
1	28	23	0	0	0	0	0	--	--
1	28	24	0	0	0	0	0	--	--
1	29	1	0	0	0	0	0	--	--
1	29	2	0	0	0	0	0	--	--
1	29	3	0	0	0	0	0	--	--
1	29	4	0	0	0	0	0	--	--
1	29	5	0	0	0	0	0	--	--
1	29	6	0	0	0	0	0	--	--
1	29	7	1	0	1	0	0	--	--
1	29	8	58	84	48	2.268	1.431	1.49	113.27
1	29	9	206	311	112	8.397	4.293	12.33	122.63
1	29	10	344	408	163	11.016	6.8445	22	133.63
1	29	11	445	435	208	11.745	8.8155	29.87	146.89
1	29	12	533	567	196	15.309	9.8415	35.13	162.64
1	29	13	558	705	139	19.035	9.4095	36.98	180.16
1	29	14	511	762	100	20.574	8.2485	35.08	197.68
1	29	15	397	721	83	19.467	6.48	29.78	213.4
1	29	16	234	534	78	14.418	4.212	21.89	226.64
1	29	17	60	171	40	4.617	1.35	12.21	237.62
1	29	18	0	0	0	0	0	1.35	246.97
1	29	19	0	0	0	0	0	--	--
1	29	20	0	0	0	0	0	--	--
1	29	21	0	0	0	0	0	--	--
1	29	22	0	0	0	0	0	--	--
1	29	23	0	0	0	0	0	--	--
1	29	24	0	0	0	0	0	--	--
1	30	1	0	0	0	0	0	--	--
1	30	2	0	0	0	0	0	--	--
1	30	3	0	0	0	0	0	--	--
1	30	4	0	0	0	0	0	--	--
1	30	5	0	0	0	0	0	--	--
1	30	6	0	0	0	0	0	--	--
1	30	7	1	0	1	0	0.027	--	--
1	30	8	51	32	47	0.864	1.323	1.63	113.03
1	30	9	163	124	126	3.348	3.9015	12.49	122.4
1	30	10	249	80	213	2.16	6.237	22.19	133.41
1	30	11	287	66	250	1.782	7.2495	30.09	146.7
1	30	12	321	70	279	1.89	8.1	35.38	162.5
1	30	13	320	70	278	1.89	8.073	37.26	180.11
1	30	14	284	47	258	1.269	7.317	35.36	197.72
1	30	15	306	230	205	6.21	6.8985	30.04	213.51
1	30	16	212	356	107	9.612	4.3065	22.13	226.79
1	30	17	60	165	41	4.455	1.3635	12.42	237.8
1	30	18	0	0	0	0	0	1.55	247.17
1	30	19	0	0	0	0	0	--	--
1	30	20	0	0	0	0	0	--	--
1	30	21	0	0	0	0	0	--	--
1	30	22	0	0	0	0	0	--	--
1	30	23	0	0	0	0	0	--	--
1	30	24	0	0	0	0	0	--	--
1	31	1	0	0	0	0	0	--	--
1	31	2	0	0	0	0	0	--	--

1	31	3	0	0	0	0	0	--	--
1	31	4	0	0	0	0	0	--	--
1	31	5	0	0	0	0	0	--	--
1	31	6	0	0	0	0	0	--	--
1	31	7	1	0	1	0	0.027	--	--
1	31	8	70	174	48	4.698	1.593	1.77	112.79
1	31	9	229	450	91	12.15	4.32	12.66	122.17
1	31	10	347	408	163	11.016	6.885	22.38	133.19
1	31	11	382	221	260	5.967	8.667	30.31	146.51
1	31	12	480	354	267	9.558	10.0845	35.64	162.37
1	31	13	520	493	224	13.311	10.044	37.53	180.07
1	31	14	490	631	145	17.037	8.5725	35.63	197.76
1	31	15	390	643	105	17.361	6.6825	30.3	213.63
1	31	16	236	448	102	12.096	4.563	22.37	226.94
1	31	17	64	176	43	4.752	1.4445	12.64	237.98
1	31	18	1	0	1	0	0.027	1.75	247.37
1	31	19	0	0	0	0	0	--	--
1	31	20	0	0	0	0	0	--	--
1	31	21	0	0	0	0	0	--	--
1	31	22	0	0	0	0	0	--	--
1	31	23	0	0	0	0	0	--	--
1	31	24	0	0	0	0	0	--	--
				96332	**38306**	**2600.964**	**1604.9205**		

Appendix B: Data for February

Month	Day	Hour	Global Radiation (W/m^2)	Direct Radiation (W/m^2)	Diffuse Radiation (W/m^2)	CPV (W)	PV (W)	Elevation (deg)	Azimuth (deg)
2	1	2	0	0	0	0	0	--	--
2	1	3	0	0	0	0	0	--	--
2	1	4	0	0	0	0	0	--	--
2	1	5	0	0	0	0	0	--	--
2	1	6	0	0	0	0	0	--	--
2	1	7	1	0	1	0	0	--	--
2	1	8	41	0	41	0	1.107	1.91	112.55
2	1	9	138	23	131	0.621	3.6315	12.82	121.93
2	1	10	229	52	205	1.404	5.859	22.58	132.97
2	1	11	295	47	269	1.269	7.614	30.55	146.32
2	1	12	332	53	300	1.431	8.532	35.9	162.24
2	1	13	331	53	299	1.431	8.505	37.82	180.03
2	1	14	295	68	258	1.836	7.4655	35.92	197.82
2	1	15	253	62	226	1.674	6.4665	30.57	213.75
2	1	16	164	78	141	2.106	4.1175	22.61	227.11
2	1	17	49	20	47	0.54	1.296	12.86	238.17
2	1	18	1	0	1	0	0.027	1.95	247.57
2	1	19	0	0	0	0	0	--	--
2	1	20	0	0	0	0	0	--	--
2	1	21	0	0	0	0	0	--	--
2	1	22	0	0	0	0	0	--	--
2	1	23	0	0	0	0	0	--	--
2	1	24	0	0	0	0	0	--	--
2	2	1	0	0	0	0	0	--	--
2	2	2	0	0	0	0	0	--	--
2	2	3	0	0	0	0	0	--	--
2	2	4	0	0	0	0	0	--	--
2	2	5	0	0	0	0	0	--	--
2	2	6	0	0	0	0	0	--	--
2	2	7	1	0	1	0	0	--	--
2	2	8	42	0	42	0	1.134	2.06	112.3
2	2	9	139	23	132	0.621	3.6585	13	121.7
2	2	10	230	51	207	1.377	5.8995	22.78	132.75
2	2	11	298	48	271	1.296	7.6815	30.79	146.13
2	2	12	331	88	278	2.376	8.2215	36.17	162.11
2	2	13	329	86	276	2.322	8.1675	38.11	179.99
2	2	14	293	46	268	1.242	7.5735	36.2	197.87
2	2	15	277	153	208	4.131	6.5475	30.84	213.88
2	2	16	190	146	145	3.942	4.5225	22.85	227.28
2	2	17	59	51	53	1.377	1.512	13.08	238.36
2	2	18	1	0	1	0	0.027	2.15	247.78
2	2	19	0	0	0	0	0	--	--
2	2	20	0	0	0	0	0	--	--
2	2	21	0	0	0	0	0	--	--
2	2	22	0	0	0	0	0	--	--
2	2	23	0	0	0	0	0	--	--
2	2	24	0	0	0	0	0	--	--
2	3	1	0	0	0	0	0	--	--
2	3	2	0	0	0	0	0	--	--
2	3	3	0	0	0	0	0	--	--
2	3	4	0	0	0	0	0	--	--
2	3	5	0	0	0	0	0	--	--
2	3	6	0	0	0	0	0	--	--
2	3	7	2	0	2	0	0	--	--
2	3	8	74	155	53	4.185	1.7145	2.22	112.06
2	3	9	243	377	124	10.179	4.9545	13.18	121.46
2	3	10	402	460	191	12.42	8.0055	22.99	132.53
2	3	11	517	666	142	17.982	8.8965	31.03	145.94
2	3	12	526	376	295	10.152	11.0835	36.45	161.98
2	3	13	446	143	358	3.861	10.854	38.4	179.95
2	3	14	300	62	266	1.674	7.641	36.49	197.94
2	3	15	327	245	216	6.615	7.3305	31.11	214.01
2	3	16	232	347	124	9.369	4.806	23.1	227.46
2	3	17	73	194	47	5.238	1.62	13.3	238.56
2	3	18	1	0	1	0	0.027	2.35	248
2	3	19	0	0	0	0	0	--	--
2	3	20	0	0	0	0	0	--	--
2	3	21	0	0	0	0	0	--	--
2	3	22	0	0	0	0	0	--	--
2	3	23	0	0	0	0	0	--	--
2	3	24	0	0	0	0	0	--	--
2	4	1	0	0	0	0	0	--	--
2	4	2	0	0	0	0	0	--	--
2	4	3	0	0	0	0	0	--	--

2	4	4	0	0	0	0	0	--	--
2	4	5	0	0	0	0	0	--	--
2	4	6	0	0	0	0	0	--	--
2	4	7	2	0	2	0	0	--	--
2	4	8	84	216	53	5.832	1.8495	2.38	111.81
2	4	9	269	498	110	13.446	5.1165	13.37	121.22
2	4	10	443	771	85	20.817	7.128	23.21	132.31
2	4	11	567	842	91	22.734	8.883	31.28	145.75
2	4	12	607	724	159	19.548	10.341	36.73	161.86
2	4	13	550	442	277	11.934	11.1645	38.7	179.92
2	4	14	401	190	294	5.13	9.3825	36.78	198.01
2	4	15	364	350	203	9.45	7.6545	31.38	214.16
2	4	16	241	459	97	12.393	4.563	23.34	227.64
2	4	17	75	198	48	5.346	1.6605	13.52	238.77
2	4	18	2	0	2	0	0.054	2.55	248.22
2	4	19	0	0	0	0	0	--	--
2	4	20	0	0	0	0	0	--	--
2	4	21	0	0	0	0	0	--	--
2	4	22	0	0	0	0	0	--	--
2	4	23	0	0	0	0	0	--	--
2	4	24	0	0	0	0	0	--	--
2	5	1	0	0	0	0	0	--	--
2	5	2	0	0	0	0	0	--	--
2	5	3	0	0	0	0	0	--	--
2	5	4	0	0	0	0	0	--	--
2	5	5	0	0	0	0	0	--	--
2	5	6	0	0	0	0	0	--	--
2	5	7	2	0	2	0	0	--	--
2	5	8	83	196	54	5.292	1.8495	2.55	111.56
2	5	9	249	406	118	10.962	4.9545	13.56	120.98
2	5	10	371	330	217	8.91	7.938	23.43	132.08
2	5	11	404	229	274	6.183	9.153	31.53	145.56
2	5	12	481	323	281	8.721	10.287	37.01	161.73
2	5	13	507	393	263	10.611	10.395	39	179.9
2	5	14	474	461	212	12.447	9.261	37.08	198.08
2	5	15	332	283	201	7.641	7.1955	31.66	214.31
2	5	16	174	107	140	2.889	4.239	23.59	227.83
2	5	17	43	0	43	0	1.161	13.74	238.98
2	5	18	1	0	1	0	0.027	2.75	248.45
2	5	19	0	0	0	0	0	--	--
2	5	20	0	0	0	0	0	--	--
2	5	21	0	0	0	0	0	--	--
2	5	22	0	0	0	0	0	--	--
2	5	23	0	0	0	0	0	--	--
2	5	24	0	0	0	0	0	--	--
2	6	1	0	0	0	0	0	--	--
2	6	2	0	0	0	0	0	--	--
2	6	3	0	0	0	0	0	--	--
2	6	4	0	0	0	0	0	--	--
2	6	5	0	0	0	0	0	--	--
2	6	6	0	0	0	0	0	--	--
2	6	7	1	0	1	0	0	--	--
2	6	8	26	0	26	0	0.702	2.72	111.3
2	6	9	146	38	133	1.026	3.7665	13.75	120.74
2	6	10	316	212	216	5.724	7.182	23.65	131.86
2	6	11	478	423	236	11.421	9.639	31.79	145.37
2	6	12	534	492	226	13.284	10.26	37.31	161.61
2	6	13	534	495	224	13.365	10.233	39.3	179.87
2	6	14	477	399	249	10.773	9.801	37.38	198.16
2	6	15	416	604	133	16.308	7.4115	31.93	214.46
2	6	16	266	543	91	14.661	4.8195	23.84	228.03
2	6	17	84	245	49	6.615	1.7955	13.97	239.2
2	6	18	2	0	2	0	0.054	2.96	248.68
2	6	19	0	0	0	0	0	--	--
2	6	20	0	0	0	0	0	--	--
2	6	21	0	0	0	0	0	--	--
2	6	22	0	0	0	0	0	--	--
2	6	23	0	0	0	0	0	--	--
2	6	24	0	0	0	0	0	--	--
2	7	1	0	0	0	0	0	--	--
2	7	2	0	0	0	0	0	--	--
2	7	3	0	0	0	0	0	--	--
2	7	4	0	0	0	0	0	--	--
2	7	5	0	0	0	0	0	--	--
2	7	6	0	0	0	0	0	--	--
2	7	7	3	0	3	0	0	--	--
2	7	8	87	209	56	5.643	1.9305	2.9	111.05
2	7	9	259	492	97	13.284	4.806	13.95	120.49
2	7	10	403	467	181	12.609	7.884	23.89	131.63
2	7	11	483	449	224	12.123	9.5445	32.06	145.17
2	7	12	579	485	273	13.095	11.502	37.6	161.49

2	7	13	606	721	152	19.467	10.233	39.62	179.85
2	7	14	559	770	116	20.79	9.1125	37.69	198.25
2	7	15	412	571	142	15.417	7.479	32.21	214.62
2	7	16	228	328	121	8.856	4.7115	24.09	228.23
2	7	17	72	94	58	2.538	1.755	14.19	239.43
2	7	18	2	0	2	0	0.054	3.16	248.92
2	7	19	0	0	0	0	0	--	--
2	7	20	0	0	0	0	0	--	--
2	7	21	0	0	0	0	0	--	--
2	7	22	0	0	0	0	0	--	--
2	7	23	0	0	0	0	0	--	--
2	7	24	0	0	0	0	0	--	--
2	8	1	0	0	0	0	0	--	--
2	8	2	0	0	0	0	0	--	--
2	8	3	0	0	0	0	0	--	--
2	8	4	0	0	0	0	0	--	--
2	8	5	0	0	0	0	0	--	--
2	8	6	0	0	0	0	0	--	--
2	8	7	3	0	3	0	0	--	--
2	8	8	92	232	56	6.264	1.998	3.08	110.79
2	8	9	280	494	116	13.338	5.346	14.16	120.25
2	8	10	457	685	129	18.495	7.911	24.12	131.4
2	8	11	587	794	126	21.438	9.6255	32.33	144.98
2	8	12	655	908	79	24.516	9.909	37.9	161.37
2	8	13	659	919	76	24.813	9.9225	39.93	179.84
2	8	14	593	904	69	24.408	8.937	37.99	198.34
2	8	15	461	792	84	21.384	7.3575	32.49	214.79
2	8	16	283	630	75	17.01	4.833	24.34	228.44
2	8	17	91	230	56	6.21	1.9845	14.41	239.66
2	8	18	3	0	3	0	0.081	3.36	249.16
2	8	19	0	0	0	0	0	--	--
2	8	20	0	0	0	0	0	--	--
2	8	21	0	0	0	0	0	--	--
2	8	22	0	0	0	0	0	--	--
2	8	23	0	0	0	0	0	--	--
2	8	24	0	0	0	0	0	--	--
2	9	1	0	0	0	0	0	--	--
2	9	2	0	0	0	0	0	--	--
2	9	3	0	0	0	0	0	--	--
2	9	4	0	0	0	0	0	--	--
2	9	5	0	0	0	0	0	--	--
2	9	6	0	0	0	0	0	--	--
2	9	7	4	0	4	0	0	--	--
2	9	8	95	239	57	6.453	2.052	3.27	110.53
2	9	9	284	531	105	14.337	5.2515	14.37	120
2	9	10	461	735	106	19.845	7.6545	24.36	131.17
2	9	11	591	843	97	22.761	9.288	32.6	144.79
2	9	12	657	889	89	24.003	10.071	38.21	161.25
2	9	13	654	883	91	23.841	10.0575	40.25	179.83
2	9	14	582	846	88	22.842	9.045	38.3	198.44
2	9	15	447	725	98	19.575	7.3575	32.78	214.97
2	9	16	268	520	94	14.04	4.887	24.59	228.66
2	9	17	84	191	55	5.157	1.8765	14.64	239.89
2	9	18	3	0	3	0	0.081	3.56	249.41
2	9	19	0	0	0	0	0	--	--
2	9	20	0	0	0	0	0	--	--
2	9	21	0	0	0	0	0	--	--
2	9	22	0	0	0	0	0	--	--
2	9	23	0	0	0	0	0	--	--
2	9	24	0	0	0	0	0	--	--
2	10	1	0	0	0	0	0	--	--
2	10	2	0	0	0	0	0	--	--
2	10	3	0	0	0	0	0	--	--
2	10	4	0	0	0	0	0	--	--
2	10	5	0	0	0	0	0	--	--
2	10	6	0	0	0	0	0	--	--
2	10	7	4	0	4	0	0	--	--
2	10	8	94	219	59	5.913	2.0655	3.46	110.27
2	10	9	256	419	114	11.313	4.995	14.59	119.75
2	10	10	348	276	214	7.452	7.587	24.61	130.94
2	10	11	314	90	261	2.43	7.7625	32.88	144.6
2	10	12	350	86	294	2.322	8.694	38.52	161.13
2	10	13	350	87	294	2.349	8.694	40.57	179.82
2	10	14	314	85	264	2.295	7.803	38.62	198.55
2	10	15	245	42	225	1.134	6.345	33.06	215.15
2	10	16	152	17	146	0.459	4.023	24.85	228.88
2	10	17	51	0	51	0	1.377	14.86	240.14
2	10	18	3	0	3	0	0.081	3.76	249.67
2	10	19	0	0	0	0	0	--	--
2	10	20	0	0	0	0	0	--	--
2	10	21	0	0	0	0	0	--	--

2	10	22	0	0	0	0	0	--	--
2	10	23	0	0	0	0	0	--	--
2	10	24	0	0	0	0	0	--	--
2	11	1	0	0	0	0	0	--	--
2	11	2	0	0	0	0	0	--	--
2	11	3	0	0	0	0	0	--	--
2	11	4	0	0	0	0	0	--	--
2	11	5	0	0	0	0	0	--	--
2	11	6	0	0	0	0	0	--	--
2	11	7	5	0	5	0	0	--	--
2	11	8	101	251	59	6.777	2.16	3.66	110.01
2	11	9	291	532	108	14.364	5.3865	14.81	119.5
2	11	10	466	765	91	20.655	7.5195	24.86	130.71
2	11	11	592	844	91	22.788	9.2205	33.17	144.4
2	11	12	662	876	95	23.652	10.2195	38.83	161.01
2	11	13	666	890	90	24.03	10.206	40.9	179.82
2	11	14	597	864	85	23.328	9.207	38.93	198.66
2	11	15	466	773	88	20.871	7.479	33.35	215.34
2	11	16	290	610	81	16.47	5.0085	25.1	229.11
2	11	17	99	274	54	7.398	2.0655	15.09	240.38
2	11	18	4	0	4	0	0.108	3.96	249.93
2	11	19	0	0	0	0	0	--	--
2	11	20	0	0	0	0	0	--	--
2	11	21	0	0	0	0	0	--	--
2	11	22	0	0	0	0	0	--	--
2	11	23	0	0	0	0	0	--	--
2	11	24	0	0	0	0	0	--	--
2	12	1	0	0	0	0	0	--	--
2	12	2	0	0	0	0	0	--	--
2	12	3	0	0	0	0	0	--	--
2	12	4	0	0	0	0	0	--	--
2	12	5	0	0	0	0	0	--	--
2	12	6	0	0	0	0	0	--	--
2	12	7	5	0	5	0	0	--	--
2	12	8	104	260	61	7.02	2.2275	3.86	109.75
2	12	9	295	536	109	14.472	5.454	15.03	119.25
2	12	10	473	778	88	21.006	7.5735	25.11	130.48
2	12	11	602	863	86	23.301	9.288	33.46	144.21
2	12	12	647	783	137	21.141	10.584	39.15	160.9
2	12	13	556	435	273	11.745	11.1915	41.23	179.82
2	12	14	320	92	265	2.484	7.8975	39.25	198.77
2	12	15	251	43	230	1.161	6.4935	33.64	215.54
2	12	16	156	19	150	0.513	4.131	25.35	229.35
2	12	17	54	0	54	0	1.458	15.31	240.64
2	12	18	4	0	4	0	0.108	4.17	250.19
2	12	19	0	0	0	0	0	--	--
2	12	20	0	0	0	0	0	--	--
2	12	21	0	0	0	0	0	--	--
2	12	22	0	0	0	0	0	--	--
2	12	23	0	0	0	0	0	--	--
2	12	24	0	0	0	0	0	--	--
2	13	1	0	0	0	0	0	--	--
2	13	2	0	0	0	0	0	--	--
2	13	3	0	0	0	0	0	--	--
2	13	4	0	0	0	0	0	--	--
2	13	5	0	0	0	0	0	--	--
2	13	6	0	0	0	0	0	--	--
2	13	7	3	0	3	0	0	--	--
2	13	8	57	0	57	0	1.539	4.07	109.49
2	13	9	159	10	155	0.27	4.239	15.26	119
2	13	10	253	51	228	1.377	6.4935	25.37	130.24
2	13	11	322	84	271	2.268	8.0055	33.75	144.02
2	13	12	357	86	301	2.322	8.883	39.47	160.78
2	13	13	357	86	301	2.322	8.883	41.57	179.82
2	13	14	321	84	271	2.268	7.992	39.57	198.9
2	13	15	310	154	233	4.158	7.3305	33.93	215.74
2	13	16	223	198	154	5.346	5.0895	25.61	229.59
2	13	17	87	73	74	1.971	2.1735	15.53	240.9
2	13	18	5	0	5	0	0.135	4.37	250.46
2	13	19	0	0	0	0	0	--	--
2	13	20	0	0	0	0	0	--	--
2	13	21	0	0	0	0	0	--	--
2	13	22	0	0	0	0	0	--	--
2	13	23	0	0	0	0	0	--	--
2	13	24	0	0	0	0	0	--	--
2	14	1	0	0	0	0	0	--	--
2	14	2	0	0	0	0	0	--	--
2	14	3	0	0	0	0	0	--	--
2	14	4	0	0	0	0	0	--	--
2	14	5	0	0	0	0	0	--	--
2	14	6	0	0	0	0	0	--	--

2	14	7	6	0	6	0	0	--	--
2	14	8	100	210	63	5.67	2.2005	4.28	109.22
2	14	9	261	370	129	9.99	5.265	15.5	118.75
2	14	10	381	360	201	9.72	7.857	25.64	130.01
2	14	11	431	191	315	5.157	10.071	34.05	143.82
2	14	12	538	360	300	9.72	11.313	39.8	160.67
2	14	13	585	527	237	14.229	11.097	41.91	179.83
2	14	14	557	642	168	17.334	9.7875	39.9	199.03
2	14	15	436	506	183	13.662	8.3565	34.22	215.95
2	14	16	275	463	111	12.501	5.211	25.86	229.84
2	14	17	98	201	63	5.427	2.1735	15.76	241.16
2	14	18	6	0	6	0	0.162	4.57	250.74
2	14	19	0	0	0	0	0	--	--
2	14	20	0	0	0	0	0	--	--
2	14	21	0	0	0	0	0	--	--
2	14	22	0	0	0	0	0	--	--
2	14	23	0	0	0	0	0	--	--
2	14	24	0	0	0	0	0	--	--
2	15	1	0	0	0	0	0	--	--
2	15	2	0	0	0	0	0	--	--
2	15	3	0	0	0	0	0	--	--
2	15	4	0	0	0	0	0	--	--
2	15	5	0	0	0	0	0	--	--
2	15	6	0	0	0	0	0	--	--
2	15	7	4	0	4	0	0	--	--
2	15	8	60	0	60	0	1.62	4.5	108.96
2	15	9	216	181	151	4.887	4.9545	15.74	118.49
2	15	10	402	385	206	10.395	8.208	25.91	129.77
2	15	11	560	582	205	15.714	10.3275	34.35	143.63
2	15	12	565	442	271	11.934	11.286	40.13	160.56
2	15	13	479	236	323	6.372	10.827	42.25	179.84
2	15	14	325	75	280	2.025	8.1675	40.22	199.16
2	15	15	256	42	235	1.134	6.6285	34.51	216.17
2	15	16	162	19	155	0.513	4.2795	26.12	230.09
2	15	17	59	0	59	0	1.593	15.98	241.43
2	15	18	3	0	3	0	0.081	4.77	251.02
2	15	19	0	0	0	0	0	--	--
2	15	20	0	0	0	0	0	--	--
2	15	21	0	0	0	0	0	--	--
2	15	22	0	0	0	0	0	--	--
2	15	23	0	0	0	0	0	--	--
2	15	24	0	0	0	0	0	--	--
2	16	1	0	0	0	0	0	--	--
2	16	2	0	0	0	0	0	--	--
2	16	3	0	0	0	0	0	--	--
2	16	4	0	0	0	0	0	--	--
2	16	5	0	0	0	0	0	--	--
2	16	6	0	0	0	0	0	--	--
2	16	7	2	0	2	0	0	--	--
2	16	8	35	0	35	0	0.945	4.72	108.69
2	16	9	93	0	93	0	2.511	15.98	118.24
2	16	10	146	0	146	0	3.942	26.18	129.54
2	16	11	184	1	183	0	4.9545	34.66	143.43
2	16	12	262	22	247	0.594	6.8715	40.47	160.45
2	16	13	315	51	281	1.377	8.046	42.59	179.86
2	16	14	326	63	287	1.701	8.2755	40.55	199.31
2	16	15	343	205	239	5.535	7.857	34.81	216.39
2	16	16	255	345	131	9.315	5.211	26.38	230.35
2	16	17	104	218	65	5.886	2.2815	16.21	241.71
2	16	18	6	0	6	0	0.162	4.97	251.3
2	16	19	0	0	0	0	0	--	--
2	16	20	0	0	0	0	0	--	--
2	16	21	0	0	0	0	0	--	--
2	16	22	0	0	0	0	0	--	--
2	16	23	0	0	0	0	0	--	--
2	16	24	0	0	0	0	0	--	--
2	17	1	0	0	0	0	0	--	--
2	17	2	0	0	0	0	0	--	--
2	17	3	0	0	0	0	0	--	--
2	17	4	0	0	0	0	0	--	--
2	17	5	0	0	0	0	0	--	--
2	17	6	0	0	0	0	0	--	--
2	17	7	8	0	8	0	0	--	--
2	17	8	119	295	64	7.965	2.4705	4.94	108.42
2	17	9	312	528	118	14.256	5.805	16.23	117.98
2	17	10	489	757	99	20.439	7.938	26.46	129.3
2	17	11	619	816	114	22.032	9.8955	34.97	143.24
2	17	12	680	840	114	22.68	10.719	40.81	160.34
2	17	13	674	820	122	22.14	10.746	42.94	179.88
2	17	14	601	781	119	21.087	9.72	40.88	199.46
2	17	15	469	677	121	18.279	7.965	35.1	216.62

2	17	16	292	479	117	12.933	5.5215	26.63	230.62
2	17	17	107	220	66	5.94	2.3355	16.43	241.99
2	17	18	7	0	7	0	0.189	5.17	251.59
2	17	19	0	0	0	0	0	--	--
2	17	20	0	0	0	0	0	--	--
2	17	21	0	0	0	0	0	--	--
2	17	22	0	0	0	0	0	--	--
2	17	23	0	0	0	0	0	--	--
2	17	24	0	0	0	0	0	--	--
2	18	1	0	0	0	0	0	--	--
2	18	2	0	0	0	0	0	--	--
2	18	3	0	0	0	0	0	--	--
2	18	4	0	0	0	0	0	--	--
2	18	5	0	0	0	0	0	--	--
2	18	6	0	0	0	0	0	--	--
2	18	7	4	0	4	0	0	--	--
2	18	8	65	0	65	0	1.755	5.17	108.16
2	18	9	169	10	166	0.27	4.5225	16.48	117.73
2	18	10	264	27	250	0.729	6.939	26.74	129.06
2	18	11	333	82	282	2.214	8.3025	35.28	143.04
2	18	12	369	84	312	2.268	9.1935	41.15	160.23
2	18	13	369	84	312	2.268	9.1935	43.3	179.91
2	18	14	333	82	281	2.214	8.289	41.22	199.61
2	18	15	295	99	244	2.673	7.2765	35.4	216.85
2	18	16	207	96	171	2.592	5.103	26.89	230.89
2	18	17	84	72	71	1.944	2.0925	16.65	242.27
2	18	18	7	0	7	0	0.189	5.37	251.88
2	18	19	0	0	0	0	0	--	--
2	18	20	0	0	0	0	0	--	--
2	18	21	0	0	0	0	0	--	--
2	18	22	0	0	0	0	0	--	--
2	18	23	0	0	0	0	0	--	--
2	18	24	0	0	0	0	0	--	--
2	19	1	0	0	0	0	0	--	--
2	19	2	0	0	0	0	0	--	--
2	19	3	0	0	0	0	0	--	--
2	19	4	0	0	0	0	0	--	--
2	19	5	0	0	0	0	0	--	--
2	19	6	0	0	0	0	0	--	--
2	19	7	7	0	7	0	0	--	--
2	19	8	67	0	67	0	1.809	5.41	107.89
2	19	9	172	10	168	0.27	4.59	16.73	117.47
2	19	10	266	36	247	0.972	6.9255	27.02	128.82
2	19	11	335	68	292	1.836	8.4645	35.6	142.85
2	19	12	415	102	345	2.754	10.26	41.5	160.13
2	19	13	455	148	354	3.996	10.9215	43.65	179.94
2	19	14	444	198	320	5.346	10.314	41.55	199.77
2	19	15	414	378	217	10.206	8.5185	35.69	217.1
2	19	16	292	475	114	12.825	5.481	27.14	231.17
2	19	17	118	277	65	7.479	2.4705	16.88	242.56
2	19	18	8	0	8	0	0.216	5.57	252.18
2	19	19	0	0	0	0	0	--	--
2	19	20	0	0	0	0	0	--	--
2	19	21	0	0	0	0	0	--	--
2	19	22	0	0	0	0	0	--	--
2	19	23	0	0	0	0	0	--	--
2	19	24	0	0	0	0	0	--	--
2	20	1	0	0	0	0	0	--	--
2	20	2	0	0	0	0	0	--	--
2	20	3	0	0	0	0	0	--	--
2	20	4	0	0	0	0	0	--	--
2	20	5	0	0	0	0	0	--	--
2	20	6	0	0	0	0	0	--	--
2	20	7	10	0	10	0	0.27	--	--
2	20	8	129	310	67	8.37	2.646	5.64	107.62
2	20	9	327	547	119	14.769	6.021	16.99	117.21
2	20	10	509	781	96	21.087	8.1675	27.31	128.58
2	20	11	641	838	110	22.626	10.1385	35.92	142.65
2	20	12	708	882	102	23.814	10.935	41.85	160.02
2	20	13	701	862	110	23.274	10.9485	44.01	179.97
2	20	14	620	771	133	20.817	10.1655	41.89	199.94
2	20	15	480	674	126	18.198	8.181	35.99	217.35
2	20	16	304	485	121	13.095	5.7375	27.4	231.45
2	20	17	115	227	71	6.129	2.511	17.1	242.86
2	20	18	9	0	9	0	0.243	5.76	252.48
2	20	19	0	0	0	0	0	--	--
2	20	20	0	0	0	0	0	--	--
2	20	21	0	0	0	0	0	--	--
2	20	22	0	0	0	0	0	--	--
2	20	23	0	0	0	0	0	--	--
2	20	24	0	0	0	0	0	--	--

2	21	1	0	0	0	0	0	--	--
2	21	2	0	0	0	0	0	--	--
2	21	3	0	0	0	0	0	--	--
2	21	4	0	0	0	0	0	--	--
2	21	5	0	0	0	0	0	--	--
2	21	6	0	0	0	0	0	--	--
2	21	7	10	0	10	0	0	--	--
2	21	8	122	238	73	6.426	2.6325	5.88	107.34
2	21	9	311	473	129	12.771	5.94	17.25	116.95
2	21	10	489	645	145	17.415	8.559	27.6	128.34
2	21	11	622	755	140	20.385	10.287	36.24	142.45
2	21	12	695	822	126	22.194	11.0835	42.2	159.92
2	21	13	699	839	119	22.653	11.043	44.37	180.01
2	21	14	638	846	100	22.842	9.963	42.22	200.11
2	21	15	485	638	147	17.226	8.532	36.29	217.6
2	21	16	284	365	145	9.855	5.7915	27.66	231.74
2	21	17	91	77	76	2.079	2.2545	17.32	243.16
2	21	18	7	0	7	0	0.189	5.96	252.79
2	21	19	0	0	0	0	0	--	--
2	21	20	0	0	0	0	0	--	--
2	21	21	0	0	0	0	0	--	--
2	21	22	0	0	0	0	0	--	--
2	21	23	0	0	0	0	0	--	--
2	21	24	0	0	0	0	0	--	--
2	22	1	0	0	0	0	0	--	--
2	22	2	0	0	0	0	0	--	--
2	22	3	0	0	0	0	0	--	--
2	22	4	0	0	0	0	0	--	--
2	22	5	0	0	0	0	0	--	--
2	22	6	0	0	0	0	0	--	--
2	22	7	7	0	7	0	0	--	--
2	22	8	72	2	72	0.054	1.944	6.13	107.07
2	22	9	179	11	174	0.297	4.7655	17.52	116.69
2	22	10	275	51	248	1.377	7.0605	27.89	128.1
2	22	11	345	83	292	2.241	8.5995	36.57	142.26
2	22	12	381	84	322	2.268	9.4905	42.56	159.82
2	22	13	381	85	322	2.295	9.4905	44.73	180.05
2	22	14	344	83	291	2.241	8.5725	42.56	200.3
2	22	15	427	338	246	9.126	9.0855	36.59	217.87
2	22	16	321	535	115	14.445	5.886	27.91	232.04
2	22	17	132	327	66	8.829	2.673	17.54	243.46
2	22	18	10	0	10	0	0.27	6.16	253.1
2	22	19	0	0	0	0	0	--	--
2	22	20	0	0	0	0	0	--	--
2	22	21	0	0	0	0	0	--	--
2	22	22	0	0	0	0	0	--	--
2	22	23	0	0	0	0	0	--	--
2	22	24	0	0	0	0	0	--	--
2	23	1	0	0	0	0	0	--	--
2	23	2	0	0	0	0	0	--	--
2	23	3	0	0	0	0	0	--	--
2	23	4	0	0	0	0	0	--	--
2	23	5	0	0	0	0	0	--	--
2	23	6	0	0	0	0	0	--	--
2	23	7	10	0	10	0	0	--	--
2	23	8	127	214	82	5.778	2.8215	6.38	106.8
2	23	9	301	438	129	11.826	5.805	17.79	116.42
2	23	10	447	460	198	12.42	8.7075	28.19	127.85
2	23	11	538	418	268	11.286	10.881	36.9	142.06
2	23	12	636	555	248	14.985	11.934	42.92	159.72
2	23	13	668	693	183	18.711	11.4885	45.1	180.1
2	23	14	622	752	138	20.304	10.26	42.91	200.48
2	23	15	458	530	172	14.31	8.505	36.88	218.13
2	23	16	251	219	166	5.913	5.6295	28.17	232.34
2	23	17	71	0	71	0	1.917	17.76	243.77
2	23	18	6	0	6	0	0.162	6.35	253.41
2	23	19	0	0	0	0	0	--	--
2	23	20	0	0	0	0	0	--	--
2	23	21	0	0	0	0	0	--	--
2	23	22	0	0	0	0	0	--	--
2	23	23	0	0	0	0	0	--	--
2	23	24	0	0	0	0	0	--	--
2	24	1	0	0	0	0	0	--	--
2	24	2	0	0	0	0	0	--	--
2	24	3	0	0	0	0	0	--	--
2	24	4	0	0	0	0	0	--	--
2	24	5	0	0	0	0	0	--	--
2	24	6	0	0	0	0	0	--	--
2	24	7	12	0	12	0	0.324	--	--
2	24	8	144	246	91	6.642	3.1725	6.63	106.53
2	24	9	342	541	127	14.607	6.3315	18.06	116.16

2	24	10	507	705	122	19.035	8.4915	28.49	127.61
2	24	11	600	613	201	16.551	10.8135	37.24	141.86
2	24	12	625	519	259	14.013	11.934	43.28	159.62
2	24	13	575	367	316	9.909	12.0285	45.47	180.15
2	24	14	461	229	313	6.183	10.449	43.25	200.68
2	24	15	392	297	230	8.019	8.397	37.18	218.41
2	24	16	269	291	155	7.857	5.724	28.42	232.64
2	24	17	114	151	82	4.077	2.646	17.98	244.09
2	24	18	9	0	9	0	0.243	6.55	253.73
2	24	19	0	0	0	0	0	--	--
2	24	20	0	0	0	0	0	--	--
2	24	21	0	0	0	0	0	--	--
2	24	22	0	0	0	0	0	--	--
2	24	23	0	0	0	0	0	--	--
2	24	24	0	0	0	0	0	--	--
2	25	1	0	0	0	0	0	--	--
2	25	2	0	0	0	0	0	--	--
2	25	3	0	0	0	0	0	--	--
2	25	4	0	0	0	0	0	--	--
2	25	5	0	0	0	0	0	--	--
2	25	6	0	0	0	0	0	--	--
2	25	7	10	0	10	0	0	--	--
2	25	8	78	7	77	0.189	2.0925	6.88	106.25
2	25	9	186	26	175	0.702	4.8735	18.33	115.9
2	25	10	282	37	262	0.999	7.344	28.8	127.36
2	25	11	351	68	307	1.836	8.883	37.58	141.66
2	25	12	387	68	338	1.836	9.7875	43.65	159.52
2	25	13	387	69	338	1.863	9.7875	45.84	180.21
2	25	14	350	68	305	1.836	8.8425	43.59	200.88
2	25	15	278	18	268	0.486	7.371	37.48	218.69
2	25	16	181	26	171	0.702	4.752	28.67	232.96
2	25	17	75	1	74	0.027	2.0115	18.2	244.41
2	25	18	8	0	8	0	0.216	6.74	254.05
2	25	19	0	0	0	0	0	--	--
2	25	20	0	0	0	0	0	--	--
2	25	21	0	0	0	0	0	--	--
2	25	22	0	0	0	0	0	--	--
2	25	23	0	0	0	0	0	--	--
2	25	24	0	0	0	0	0	--	--
2	26	1	0	0	0	0	0	--	--
2	26	2	0	0	0	0	0	--	--
2	26	3	0	0	0	0	0	--	--
2	26	4	0	0	0	0	0	--	--
2	26	5	0	0	0	0	0	--	--
2	26	6	0	0	0	0	0	--	--
2	26	7	14	0	14	0	0	--	--
2	26	8	150	246	95	6.642	3.3075	7.14	105.98
2	26	9	337	518	126	13.986	6.2505	18.61	115.63
2	26	10	463	453	211	12.231	9.099	29.1	127.12
2	26	11	471	230	320	6.21	10.6785	37.92	141.46
2	26	12	585	352	333	9.504	12.393	44.02	159.42
2	26	13	634	517	265	13.959	12.1365	46.21	180.27
2	26	14	609	603	212	16.281	11.0835	43.94	201.08
2	26	15	485	515	202	13.905	9.2745	37.78	218.98
2	26	16	318	477	127	12.879	6.0075	28.93	233.27
2	26	17	132	248	78	6.696	2.835	18.42	244.73
2	26	18	12	0	12	0	0.324	6.94	254.37
2	26	19	0	0	0	0	0	--	--
2	26	20	0	0	0	0	0	--	--
2	26	21	0	0	0	0	0	--	--
2	26	22	0	0	0	0	0	--	--
2	26	23	0	0	0	0	0	--	--
2	26	24	0	0	0	0	0	--	--
2	27	1	0	0	0	0	0	--	--
2	27	2	0	0	0	0	0	--	--
2	27	3	0	0	0	0	0	--	--
2	27	4	0	0	0	0	0	--	--
2	27	5	0	0	0	0	0	--	--
2	27	6	0	0	0	0	0	--	--
2	27	7	12	0	12	0	0.324	--	--
2	27	8	130	167	92	4.509	2.997	7.4	105.7
2	27	9	300	340	160	9.18	6.21	18.89	115.36
2	27	10	451	420	216	11.34	9.0045	29.41	126.87
2	27	11	560	461	253	12.447	10.9755	38.26	141.26
2	27	12	589	370	322	9.99	12.2985	44.39	159.33
2	27	13	557	304	338	8.208	12.0825	46.59	180.33
2	27	14	472	184	350	4.968	11.097	44.28	201.3
2	27	15	349	142	270	3.834	8.3565	38.08	219.28
2	27	16	209	79	177	2.133	5.211	29.18	233.59
2	27	17	78	2	78	0.054	2.106	18.63	245.06
2	27	18	11	0	11	0	0.297	7.13	254.7

2	27	19	0	0	0	0	0	--	--
2	27	20	0	0	0	0	0	--	--
2	27	21	0	0	0	0	0	--	--
2	27	22	0	0	0	0	0	--	--
2	27	23	0	0	0	0	0	--	--
2	27	24	0	0	0	0	0	--	--
2	28	1	0	0	0	0	0	--	--
2	28	2	0	0	0	0	0	--	--
2	28	3	0	0	0	0	0	--	--
2	28	4	0	0	0	0	0	--	--
2	28	5	0	0	0	0	0	--	--
2	28	6	0	0	0	0	0	--	--
2	28	7	17	0	17	0	0.459	--	--
2	28	8	160	264	99	7.128	3.4965	7.66	105.43
2	28	9	365	568	128	15.336	6.6555	19.18	115.1
2	28	10	548	783	105	21.141	8.8155	29.73	126.62
2	28	11	678	854	106	23.058	10.584	38.61	141.06
2	28	12	747	874	114	23.598	11.6235	44.76	159.23
2	28	13	741	863	118	23.301	11.5965	46.96	180.4
2	28	14	667	832	113	22.464	10.53	44.63	201.52
2	28	15	532	781	96	21.087	8.478	38.37	219.58
2	28	16	351	612	101	16.524	6.102	29.43	233.92
2	28	17	148	324	76	8.748	3.024	18.85	245.39
2	28	18	14	0	14	0	0.378	7.32	255.03
2	28	19	0	0	0	0	0	--	--
2	28	20	0	0	0	0	0	--	--
2	28	21	0	0	0	0	0	--	--
2	28	22	0	0	0	0	0	--	--
2	28	23	0	0	0	0	0	--	--
2	28	24	0	0	0	0	0	--	--
				96174	**46537**	**2596.671**	**1925.586**		

Appendix C: Data for March

Month	Day	Hour	Global Radiation (W/m^2)	Direct Radiation (W/m^2)	Diffuse Radiation (W/m^2)	CPV (W)	PV (W)	Elevation (deg)	Azimuth (deg)
3	1	1	0	0	0	0	0	--	--
3	1	2	0	0	0	0	0	--	--
3	1	3	0	0	0	0	0	--	--
3	1	4	0	0	0	0	0	--	--
3	1	5	0	0	0	0	0	--	--
3	1	6	0	0	0	0	0	--	--
3	1	7	15	0	15	0	0.405	--	--
3	1	8	90	17	85	0.459	2.3625	7.93	105.15
3	1	9	200	12	195	0.324	5.3325	19.46	114.83
3	1	10	297	77	253	2.079	7.425	30.04	126.37
3	1	11	366	82	311	2.214	9.1395	38.95	140.86
3	1	12	402	83	341	2.241	10.0305	45.14	159.14
3	1	13	401	82	340	2.214	10.0035	47.34	180.47
3	1	14	362	81	308	2.187	9.045	44.98	201.74
3	1	15	291	52	261	1.404	7.452	38.67	219.88
3	1	16	192	20	184	0.54	5.076	29.68	234.25
3	1	17	83	3	82	0.081	2.2275	19.07	245.72
3	1	18	8	0	8	0	0.216	7.51	255.37
3	1	19	0	0	0	0	0	--	--
3	1	20	0	0	0	0	0	--	--
3	1	21	0	0	0	0	0	--	--
3	1	22	0	0	0	0	0	--	--
3	1	23	0	0	0	0	0	--	--
3	1	24	0	0	0	0	0	--	--
3	2	1	0	0	0	0	0	--	--
3	2	2	0	0	0	0	0	--	--
3	2	3	0	0	0	0	0	--	--
3	2	4	0	0	0	0	0	--	--
3	2	5	0	0	0	0	0	--	--
3	2	6	0	0	0	0	0	--	--
3	2	7	10	0	10	0	0.27	--	--
3	2	8	91	24	85	0.648	2.376	8.2	104.88
3	2	9	200	26	189	0.702	5.2515	19.75	114.56
3	2	10	296	29	280	0.783	7.776	30.36	126.12
3	2	11	366	66	321	1.782	9.2745	39.31	140.66
3	2	12	402	67	353	1.809	10.1925	45.52	159.05
3	2	13	402	68	352	1.836	10.179	47.72	180.55
3	2	14	365	81	310	2.187	9.1125	45.32	201.97
3	2	15	438	286	275	7.722	9.6255	38.97	220.2
3	2	16	342	475	143	12.825	6.5475	29.93	234.59
3	2	17	158	350	76	9.45	3.159	19.28	246.06
3	2	18	16	0	16	0	0.432	7.7	255.7
3	2	19	0	0	0	0	0	--	--
3	2	20	0	0	0	0	0	--	--
3	2	21	0	0	0	0	0	--	--
3	2	22	0	0	0	0	0	--	--
3	2	23	0	0	0	0	0	--	--
3	2	24	0	0	0	0	0	--	--
3	3	1	0	0	0	0	0	--	--
3	3	2	0	0	0	0	0	--	--
3	3	3	0	0	0	0	0	--	--
3	3	4	0	0	0	0	0	--	--
3	3	5	0	0	0	0	0	--	--
3	3	6	0	0	0	0	0	--	--
3	3	7	11	0	11	0	0.297	--	--
3	3	8	94	21	89	0.567	2.4705	8.47	104.6
3	3	9	230	88	192	2.376	5.697	20.04	114.29
3	3	10	372	132	295	3.564	9.0045	30.68	125.87
3	3	11	494	185	367	4.995	11.6235	39.66	140.46
3	3	12	541	256	352	6.912	12.0555	45.9	158.95
3	3	13	539	255	350	6.885	12.0015	48.11	180.63
3	3	14	488	252	316	6.804	10.854	45.67	202.21
3	3	15	363	130	289	3.51	8.802	39.27	220.52
3	3	16	220	79	187	2.133	5.4945	30.18	234.93
3	3	17	86	4	85	0.108	2.3085	19.49	246.4
3	3	18	8	0	8	0	0.216	7.89	256.04
3	3	19	0	0	0	0	0	--	--
3	3	20	0	0	0	0	0	--	--
3	3	21	0	0	0	0	0	--	--
3	3	22	0	0	0	0	0	--	--
3	3	23	0	0	0	0	0	--	--
3	3	24	0	0	0	0	0	--	--
3	4	1	0	0	0	0	0	--	--
3	4	2	0	0	0	0	0	--	--

3	4	3	0	0	0	0	0	--	--
3	4	4	0	0	0	0	0	--	--
3	4	5	0	0	0	0	0	--	--
3	4	6	0	0	0	0	0	--	--
3	4	7	21	0	21	0	0.567	--	--
3	4	8	167	215	112	5.805	3.7665	8.74	104.32
3	4	9	351	448	154	12.096	6.8175	20.34	114.02
3	4	10	501	434	245	11.718	10.071	31	125.62
3	4	11	593	409	310	11.043	12.1905	40.01	140.25
3	4	12	650	422	335	11.394	13.2975	46.28	158.86
3	4	13	647	421	334	11.367	13.2435	48.49	180.72
3	4	14	586	407	307	10.989	12.0555	46.02	202.46
3	4	15	451	287	285	7.749	9.936	39.56	220.84
3	4	16	285	127	230	3.429	6.9525	30.43	235.28
3	4	17	118	65	102	1.755	2.97	19.7	246.75
3	4	18	16	0	16	0	0.432	8.08	256.39
3	4	19	0	0	0	0	0	--	--
3	4	20	0	0	0	0	0	--	--
3	4	21	0	0	0	0	0	--	--
3	4	22	0	0	0	0	0	--	--
3	4	23	0	0	0	0	0	--	--
3	4	24	0	0	0	0	0	--	--
3	5	1	0	0	0	0	0	--	--
3	5	2	0	0	0	0	0	--	--
3	5	3	0	0	0	0	0	--	--
3	5	4	0	0	0	0	0	--	--
3	5	5	0	0	0	0	0	--	--
3	5	6	0	0	0	0	0	--	--
3	5	7	23	0	23	0	0.621	--	--
3	5	8	187	291	111	7.857	4.023	9.02	104.04
3	5	9	399	602	131	16.254	7.155	20.63	113.75
3	5	10	584	804	107	21.708	9.3285	31.32	125.36
3	5	11	717	879	104	23.733	11.0835	40.37	140.05
3	5	12	777	873	121	23.571	12.123	46.66	158.77
3	5	13	754	783	168	21.141	12.447	48.88	180.81
3	5	14	647	612	224	16.524	11.7585	46.37	202.71
3	5	15	491	472	216	12.744	9.5445	39.86	221.17
3	5	16	302	284	180	7.668	6.507	30.67	235.63
3	5	17	119	77	100	2.079	2.9565	19.91	247.1
3	5	18	16	0	16	0	0.432	8.27	256.73
3	5	19	0	0	0	0	0	--	--
3	5	20	0	0	0	0	0	--	--
3	5	21	0	0	0	0	0	--	--
3	5	22	0	0	0	0	0	--	--
3	5	23	0	0	0	0	0	--	--
3	5	24	0	0	0	0	0	--	--
3	6	1	0	0	0	0	0	--	--
3	6	2	0	0	0	0	0	--	--
3	6	3	0	0	0	0	0	--	--
3	6	4	0	0	0	0	0	--	--
3	6	5	0	0	0	0	0	--	--
3	6	6	0	0	0	0	0	--	--
3	6	7	9	0	9	0	0.243	--	--
3	6	8	57	0	57	0	1.539	9.3	103.76
3	6	9	121	0	121	0	3.267	20.93	113.48
3	6	10	176	0	176	0	4.752	31.65	125.11
3	6	11	215	1	215	0.027	5.805	40.73	139.84
3	6	12	235	1	235	0.027	6.345	47.05	158.68
3	6	13	235	1	234	0.027	6.3315	49.26	180.9
3	6	14	213	1	212	0.027	5.7375	46.72	202.97
3	6	15	171	0	171	0	4.617	40.15	221.51
3	6	16	115	0	115	0	3.105	30.92	235.99
3	6	17	51	0	51	0	1.377	20.12	247.45
3	6	18	7	0	7	0	0.189	8.45	257.08
3	6	19	0	0	0	0	0	--	--
3	6	20	0	0	0	0	0	--	--
3	6	21	0	0	0	0	0	--	--
3	6	22	0	0	0	0	0	--	--
3	6	23	0	0	0	0	0	--	--
3	6	24	0	0	0	0	0	--	--
3	7	1	0	0	0	0	0	--	--
3	7	2	0	0	0	0	0	--	--
3	7	3	0	0	0	0	0	--	--
3	7	4	0	0	0	0	0	--	--
3	7	5	0	0	0	0	0	--	--
3	7	6	0	0	0	0	0	--	--
3	7	7	17	0	17	0	0.459	--	--
3	7	8	137	97	111	2.619	3.348	9.58	103.49
3	7	9	265	84	227	2.268	6.642	21.23	113.21
3	7	10	351	124	276	3.348	8.4645	31.97	124.85
3	7	11	383	59	341	1.593	9.774	41.09	139.63

3	7	12	418	82	356	2.214	10.449	47.44	158.59
3	7	13	417	82	354	2.214	10.4085	49.65	181
3	7	14	378	81	321	2.187	9.4365	47.07	203.23
3	7	15	304	76	260	2.052	7.614	40.44	221.85
3	7	16	204	21	195	0.567	5.3865	31.16	236.35
3	7	17	92	5	91	0.135	2.4705	20.33	247.8
3	7	18	10	0	10	0	0.27	8.64	257.43
3	7	19	0	0	0	0	0	--	--
3	7	20	0	0	0	0	0	--	--
3	7	21	0	0	0	0	0	--	--
3	7	22	0	0	0	0	0	--	--
3	7	23	0	0	0	0	0	--	--
3	7	24	0	0	0	0	0	--	--
3	8	1	0	0	0	0	0	--	--
3	8	2	0	0	0	0	0	--	--
3	8	3	0	0	0	0	0	--	--
3	8	4	0	0	0	0	0	--	--
3	8	5	0	0	0	0	0	--	--
3	8	6	0	0	0	0	0	--	--
3	8	7	14	0	14	0	0.378	--	--
3	8	8	105	26	98	0.702	2.7405	9.86	103.21
3	8	9	307	240	197	6.48	6.804	21.53	112.93
3	8	10	527	507	218	13.689	10.0575	32.3	124.59
3	8	11	697	742	168	20.034	11.6775	41.45	139.42
3	8	12	701	548	283	14.796	13.284	47.83	158.51
3	8	13	590	285	373	7.695	13.0005	50.04	181.1
3	8	14	377	65	332	1.755	9.5715	47.41	203.5
3	8	15	341	94	286	2.538	8.4645	40.74	222.2
3	8	16	252	77	218	2.079	6.345	31.41	236.71
3	8	17	124	93	100	2.511	3.024	20.54	248.16
3	8	18	17	0	17	0	0.459	8.82	257.79
3	8	19	0	0	0	0	0	--	--
3	8	20	0	0	0	0	0	--	--
3	8	21	0	0	0	0	0	--	--
3	8	22	0	0	0	0	0	--	--
3	8	23	0	0	0	0	0	--	--
3	8	24	0	0	0	0	0	--	--
3	9	1	0	0	0	0	0	--	--
3	9	2	0	0	0	0	0	--	--
3	9	3	0	0	0	0	0	--	--
3	9	4	0	0	0	0	0	--	--
3	9	5	0	0	0	0	0	--	--
3	9	6	0	0	0	0	0	--	--
3	9	7	22	0	22	0	0.594	--	--
3	9	8	168	190	115	5.13	3.8205	10.14	102.93
3	9	9	357	371	184	10.017	7.3035	21.83	112.66
3	9	10	531	516	214	13.932	10.0575	32.63	124.33
3	9	11	663	618	221	16.686	11.934	41.81	139.21
3	9	12	658	456	307	12.312	13.0275	48.22	158.42
3	9	13	556	219	389	5.913	12.7575	50.43	181.21
3	9	14	380	70	331	1.89	9.5985	47.76	203.78
3	9	15	307	36	286	0.972	8.0055	41.03	222.56
3	9	16	207	28	195	0.756	5.427	31.65	237.08
3	9	17	95	5	93	0.135	2.538	20.74	248.52
3	9	18	14	0	14	0	0.378	9.01	258.14
3	9	19	0	0	0	0	0	--	--
3	9	20	0	0	0	0	0	--	--
3	9	21	0	0	0	0	0	--	--
3	9	22	0	0	0	0	0	--	--
3	9	23	0	0	0	0	0	--	--
3	9	24	0	0	0	0	0	--	--
3	10	1	0	0	0	0	0	--	--
3	10	2	0	0	0	0	0	--	--
3	10	3	0	0	0	0	0	--	--
3	10	4	0	0	0	0	0	--	--
3	10	5	0	0	0	0	0	--	--
3	10	6	0	0	0	0	0	--	--
3	10	7	21	0	21	0	0.567	--	--
3	10	8	111	31	102	0.837	2.8755	10.43	102.65
3	10	9	275	131	213	3.537	6.588	22.13	112.38
3	10	10	455	269	289	7.263	10.044	32.96	124.07
3	10	11	610	430	300	11.61	12.285	42.18	139
3	10	12	690	485	315	13.095	13.5675	48.61	158.33
3	10	13	708	530	300	14.31	13.608	50.82	181.32
3	10	14	659	644	201	17.388	11.61	48.11	204.07
3	10	15	532	614	163	16.578	9.3825	41.32	222.92
3	10	16	359	489	141	13.203	6.75	31.89	237.45
3	10	17	165	296	88	7.992	3.4155	20.95	248.89
3	10	18	20	0	20	0	0.54	9.19	258.5
3	10	19	0	0	0	0	0	--	--
3	10	20	0	0	0	0	0	--	--

3	10	21	0	0	0	0	0	--	--
3	10	22	0	0	0	0	0	--	--
3	10	23	0	0	0	0	0	--	--
3	10	24	0	0	0	0	0	--	--
3	11	1	0	0	0	0	0	--	--
3	11	2	0	0	0	0	0	--	--
3	11	3	0	0	0	0	0	--	--
3	11	4	0	0	0	0	0	--	--
3	11	5	0	0	0	0	0	--	--
3	11	6	0	0	0	0	0	--	--
3	11	7	24	0	24	0	0.648	--	--
3	11	8	151	104	121	2.808	3.672	10.72	102.37
3	11	9	355	338	194	9.126	7.4115	22.44	112.11
3	11	10	559	558	212	15.066	10.4085	33.29	123.81
3	11	11	716	709	201	19.143	12.3795	42.54	138.79
3	11	12	789	826	147	22.302	12.636	49.01	158.24
3	11	13	793	852	133	23.004	12.501	51.21	181.44
3	11	14	725	847	119	22.869	11.394	48.46	204.36
3	11	15	589	808	100	21.816	9.3015	41.61	223.28
3	11	16	400	665	100	17.955	6.75	32.13	237.83
3	11	17	186	378	86	10.206	3.672	21.15	249.26
3	11	18	22	0	22	0	0.594	9.37	258.86
3	11	19	0	0	0	0	0	--	--
3	11	20	0	0	0	0	0	--	--
3	11	21	0	0	0	0	0	--	--
3	11	22	0	0	0	0	0	--	--
3	11	23	0	0	0	0	0	--	--
3	11	24	0	0	0	0	0	--	--
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3	12	2	0	0	0	0	0	--	--
3	12	3	0	0	0	0	0	--	--
3	12	4	0	0	0	0	0	--	--
3	12	5	0	0	0	0	0	--	--
3	12	6	0	0	0	0	0	--	--
3	12	7	33	20	31	0.54	0.864	--	--
3	12	8	219	343	118	9.261	4.5495	11	102.09
3	12	9	426	623	128	16.821	7.479	22.74	111.83
3	12	10	576	669	157	18.063	9.8955	33.62	123.54
3	12	11	620	435	302	11.745	12.447	42.91	138.58
3	12	12	611	294	382	7.938	13.4055	49.4	158.16
3	12	13	528	198	375	5.346	12.1905	51.6	181.56
3	12	14	390	74	337	1.998	9.8145	48.81	204.65
3	12	15	274	14	265	0.378	7.2765	41.89	223.65
3	12	16	155	3	153	0.081	4.158	32.36	238.2
3	12	17	56	0	56	0	1.512	21.35	249.62
3	12	18	9	0	9	0	0.243	9.55	259.22
3	12	19	0	0	0	0	0	--	--
3	12	20	0	0	0	0	0	--	--
3	12	21	0	0	0	0	0	--	--
3	12	22	0	0	0	0	0	--	--
3	12	23	0	0	0	0	0	--	--
3	12	24	0	0	0	0	0	--	--
3	13	1	0	0	0	0	0	--	--
3	13	2	0	0	0	0	0	--	--
3	13	3	0	0	0	0	0	--	--
3	13	4	0	0	0	0	0	--	--
3	13	5	0	0	0	0	0	--	--
3	13	6	0	0	0	0	0	--	--
3	13	7	30	0	30	0	0.81	--	--
3	13	8	157	96	128	2.592	3.8475	11.29	101.81
3	13	9	286	86	244	2.322	7.155	23.05	111.55
3	13	10	370	124	292	3.348	8.937	33.96	123.28
3	13	11	400	59	356	1.593	10.206	43.28	138.36
3	13	12	486	113	397	3.051	11.9205	49.8	158.07
3	13	13	530	164	402	4.428	12.582	51.99	181.68
3	13	14	518	181	388	4.887	12.231	49.15	204.95
3	13	15	494	377	263	10.179	10.2195	42.18	224.03
3	13	16	369	480	150	12.96	7.0065	32.6	238.59
3	13	17	183	344	90	9.288	3.6855	21.55	250
3	13	18	23	1	23	0.027	0.621	9.73	259.58
3	13	19	0	0	0	0	0	--	--
3	13	20	0	0	0	0	0	--	--
3	13	21	0	0	0	0	0	--	--
3	13	22	0	0	0	0	0	--	--
3	13	23	0	0	0	0	0	--	--
3	13	24	0	0	0	0	0	--	--
3	14	1	0	0	0	0	0	--	--
3	14	2	0	0	0	0	0	--	--
3	14	3	0	0	0	0	0	--	--
3	14	4	0	0	0	0	0	--	--
3	14	5	0	0	0	0	0	--	--

3	14	6	0	0	0	0	0	--	--
3	14	7	39	35	35	0.945	0.999	-0.59	92.73
3	14	8	228	348	122	9.396	4.725	11.58	101.53
3	14	9	443	654	123	17.658	7.641	23.36	111.27
3	14	10	625	787	124	21.249	10.1115	34.29	123.01
3	14	11	752	843	128	22.761	11.88	43.64	138.14
3	14	12	803	825	152	22.275	12.8925	50.19	157.98
3	14	13	777	732	202	19.764	13.2165	52.39	181.81
3	14	14	677	623	225	16.821	12.177	49.5	205.26
3	14	15	549	624	165	16.848	9.639	42.46	224.41
3	14	16	374	486	150	13.122	7.074	32.83	238.97
3	14	17	176	293	97	7.911	3.6855	21.75	250.37
3	14	18	23	5	23	0.135	0.621	9.91	259.94
3	14	19	0	0	0	0	0	--	--
3	14	20	0	0	0	0	0	--	--
3	14	21	0	0	0	0	0	--	--
3	14	22	0	0	0	0	0	--	--
3	14	23	0	0	0	0	0	--	--
3	14	24	0	0	0	0	0	--	--
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3	15	2	0	0	0	0	0	--	--
3	15	3	0	0	0	0	0	--	--
3	15	4	0	0	0	0	0	--	--
3	15	5	0	0	0	0	0	--	--
3	15	6	0	0	0	0	0	--	--
3	15	7	42	41	37	1.107	1.0665	-0.31	92.44
3	15	8	232	345	125	9.315	4.8195	11.88	101.24
3	15	9	445	642	128	17.334	7.7355	23.67	110.99
3	15	10	625	791	118	21.357	10.0305	34.63	122.75
3	15	11	749	825	135	22.275	11.934	44.01	137.93
3	15	12	780	734	197	19.818	13.1895	50.59	157.9
3	15	13	703	521	291	14.067	13.419	52.78	181.94
3	15	14	522	215	365	5.805	11.9745	49.85	205.58
3	15	15	451	286	274	7.722	9.7875	42.75	224.79
3	15	16	325	294	189	7.938	6.939	33.06	239.36
3	15	17	161	179	112	4.833	3.6855	21.95	250.75
3	15	18	23	0	23	0	0.621	10.09	260.31
3	15	19	0	0	0	0	0	--	--
3	15	20	0	0	0	0	0	--	--
3	15	21	0	0	0	0	0	--	--
3	15	22	0	0	0	0	0	--	--
3	15	23	0	0	0	0	0	--	--
3	15	24	0	0	0	0	0	--	--
3	16	1	0	0	0	0	0	--	--
3	16	2	0	0	0	0	0	--	--
3	16	3	0	0	0	0	0	--	--
3	16	4	0	0	0	0	0	--	--
3	16	5	0	0	0	0	0	--	--
3	16	6	0	0	0	0	0	--	--
3	16	7	43	39	39	1.053	1.107	-0.02	92.16
3	16	8	216	327	113	8.829	4.4415	12.17	100.96
3	16	9	429	543	159	14.661	7.938	23.98	110.71
3	16	10	620	697	170	18.819	10.665	34.96	122.48
3	16	11	759	808	154	21.816	12.3255	44.38	137.7
3	16	12	822	853	140	23.031	12.987	50.99	157.81
3	16	13	815	851	140	22.977	12.8925	53.17	182.08
3	16	14	738	825	134	22.275	11.772	50.19	205.9
3	16	15	602	789	111	21.303	9.6255	43.03	225.18
3	16	16	413	653	108	17.631	7.0335	33.29	239.76
3	16	17	198	379	92	10.233	3.915	22.14	251.12
3	16	18	26	16	24	0.432	0.675	10.26	260.68
3	16	19	0	0	0	0	0	--	--
3	16	20	0	0	0	0	0	--	--
3	16	21	0	0	0	0	0	--	--
3	16	22	0	0	0	0	0	--	--
3	16	23	0	0	0	0	0	--	--
3	16	24	0	0	0	0	0	--	--
3	17	1	0	0	0	0	0	--	--
3	17	2	0	0	0	0	0	--	--
3	17	3	0	0	0	0	0	--	--
3	17	4	0	0	0	0	0	--	--
3	17	5	0	0	0	0	0	--	--
3	17	6	0	0	0	0	0	--	--
3	17	7	31	0	31	0	0.837	0.26	91.88
3	17	8	128	11	125	0.297	3.4155	12.46	100.68
3	17	9	242	31	227	0.837	6.3315	24.28	110.43
3	17	10	340	63	299	1.701	8.6265	35.3	122.2
3	17	11	409	79	349	2.133	10.233	44.75	137.48
3	17	12	496	111	407	2.997	12.1905	51.39	157.72
3	17	13	540	161	411	4.347	12.8385	53.57	182.22
3	17	14	529	179	397	4.833	12.501	50.53	206.23

3	17	15	398	127	318	3.429	9.666	43.31	225.58
3	17	16	248	80	211	2.16	6.1965	33.52	240.15
3	17	17	107	9	104	0.243	2.8485	22.34	251.5
3	17	18	22	0	22	0	0.594	10.44	261.04
3	17	19	0	0	0	0	0	--	--
3	17	20	0	0	0	0	0	--	--
3	17	21	0	0	0	0	0	--	--
3	17	22	0	0	0	0	0	--	--
3	17	23	0	0	0	0	0	--	--
3	17	24	0	0	0	0	0	--	--
3	18	1	0	0	0	0	0	--	--
3	18	2	0	0	0	0	0	--	--
3	18	3	0	0	0	0	0	--	--
3	18	4	0	0	0	0	0	--	--
3	18	5	0	0	0	0	0	--	--
3	18	6	0	0	0	0	0	--	--
3	18	7	51	63	44	1.701	1.2825	0.55	91.6
3	18	8	247	357	131	9.639	5.103	12.75	100.4
3	18	9	462	655	129	17.685	7.9785	24.59	110.15
3	18	10	645	787	129	21.249	10.449	35.63	121.93
3	18	11	774	850	130	22.95	12.204	45.12	137.26
3	18	12	832	883	120	23.841	12.852	51.78	157.64
3	18	13	816	850	134	22.95	12.825	53.96	182.36
3	18	14	725	747	171	20.169	12.096	50.87	206.56
3	18	15	575	660	160	17.82	9.9225	43.59	225.98
3	18	16	382	486	152	13.122	7.209	33.75	240.55
3	18	17	177	232	111	6.264	3.888	22.53	251.89
3	18	18	22	0	22	0	0.594	10.61	261.41
3	18	19	0	0	0	0	0	--	--
3	18	20	0	0	0	0	0	--	--
3	18	21	0	0	0	0	0	--	--
3	18	22	0	0	0	0	0	--	--
3	18	23	0	0	0	0	0	--	--
3	18	24	0	0	0	0	0	--	--
3	19	1	0	0	0	0	0	--	--
3	19	2	0	0	0	0	0	--	--
3	19	3	0	0	0	0	0	--	--
3	19	4	0	0	0	0	0	--	--
3	19	5	0	0	0	0	0	--	--
3	19	6	0	0	0	0	0	--	--
3	19	7	29	0	29	0	0.783	0.84	91.32
3	19	8	134	16	128	0.432	3.537	13.05	100.12
3	19	9	248	23	236	0.621	6.534	24.9	109.86
3	19	10	345	63	303	1.701	8.748	35.97	121.66
3	19	11	414	66	363	1.782	10.4895	45.49	137.03
3	19	12	447	79	383	2.133	11.205	52.18	157.55
3	19	13	443	79	379	2.133	11.097	54.35	182.51
3	19	14	402	66	353	1.782	10.1925	51.22	206.9
3	19	15	327	36	304	0.972	8.5185	43.86	226.38
3	19	16	225	21	215	0.567	5.94	33.97	240.95
3	19	17	109	8	107	0.216	2.916	22.72	252.27
3	19	18	16	0	16	0	0.432	10.78	261.78
3	19	19	0	0	0	0	0	--	--
3	19	20	0	0	0	0	0	--	--
3	19	21	0	0	0	0	0	--	--
3	19	22	0	0	0	0	0	--	--
3	19	23	0	0	0	0	0	--	--
3	19	24	0	0	0	0	0	--	--
3	20	1	0	0	0	0	0	--	--
3	20	2	0	0	0	0	0	--	--
3	20	3	0	0	0	0	0	--	--
3	20	4	0	0	0	0	0	--	--
3	20	5	0	0	0	0	0	--	--
3	20	6	0	0	0	0	0	--	--
3	20	7	44	4	43	0.108	1.1745	1.13	91.03
3	20	8	214	245	132	6.615	4.671	13.34	99.83
3	20	9	356	149	279	4.023	8.5725	25.21	109.58
3	20	10	430	130	343	3.51	10.4355	36.3	121.38
3	20	11	418	73	362	1.971	10.53	45.86	136.8
3	20	12	452	55	407	1.485	11.5965	52.58	157.46
3	20	13	448	55	403	1.485	11.4885	54.74	182.66
3	20	14	406	81	346	2.187	10.152	51.56	207.25
3	20	15	370	89	314	2.403	9.234	44.14	226.79
3	20	16	280	100	232	2.7	6.912	34.2	241.36
3	20	17	148	74	126	1.998	3.699	22.91	252.65
3	20	18	25	0	25	0	0.675	10.96	262.15
3	20	19	0	0	0	0	0	--	--
3	20	20	0	0	0	0	0	--	--
3	20	21	0	0	0	0	0	--	--
3	20	22	0	0	0	0	0	--	--
3	20	23	0	0	0	0	0	--	--

3	20	24	0	0	0	0	0	--	--
3	21	1	0	0	0	0	0	--	--
3	21	2	0	0	0	0	0	--	--
3	21	3	0	0	0	0	0	--	--
3	21	4	0	0	0	0	0	--	--
3	21	5	0	0	0	0	0	--	--
3	21	6	1	0	1	0	0	--	--
3	21	7	62	85	51	2.295	1.5255	1.41	90.75
3	21	8	263	373	136	10.071	5.3865	13.63	99.55
3	21	9	481	673	129	18.171	8.235	25.52	109.29
3	21	10	664	801	128	21.627	10.692	36.63	121.1
3	21	11	788	858	127	23.166	12.3525	46.23	136.57
3	21	12	827	774	193	20.898	13.77	52.98	157.37
3	21	13	776	602	286	16.254	14.337	55.14	182.81
3	21	14	639	419	324	11.313	13.0005	51.89	207.6
3	21	15	471	269	299	7.263	10.395	44.41	227.21
3	21	16	282	129	220	3.483	6.777	34.42	241.76
3	21	17	113	11	110	0.297	3.0105	23.1	253.04
3	21	18	15	0	15	0	0.405	11.13	262.52
3	21	19	0	0	0	0	0	--	--
3	21	20	0	0	0	0	0	--	--
3	21	21	0	0	0	0	0	--	--
3	21	22	0	0	0	0	0	--	--
3	21	23	0	0	0	0	0	--	--
3	21	24	0	0	0	0	0	--	--
3	22	1	0	0	0	0	0	--	--
3	22	2	0	0	0	0	0	--	--
3	22	3	0	0	0	0	0	--	--
3	22	4	0	0	0	0	0	--	--
3	22	5	0	0	0	0	0	--	--
3	22	6	1	0	1	0	0	--	--
3	22	7	63	77	52	2.079	1.5525	1.7	90.47
3	22	8	268	392	132	10.584	5.4	13.93	99.27
3	22	9	483	663	133	17.901	8.316	25.83	109.01
3	22	10	659	769	142	20.763	10.8135	36.97	120.82
3	22	11	772	789	161	21.303	12.5955	46.6	136.34
3	22	12	767	542	321	14.634	14.688	53.38	157.28
3	22	13	641	324	376	8.748	13.7295	55.53	182.97
3	22	14	411	86	346	2.322	10.2195	52.23	207.95
3	22	15	444	216	305	5.832	10.1115	44.68	227.62
3	22	16	361	342	195	9.234	7.506	34.64	242.17
3	22	17	196	258	119	6.966	4.2525	23.29	253.43
3	22	18	29	0	29	0	0.783	11.3	262.89
3	22	19	0	0	0	0	0	--	--
3	22	20	0	0	0	0	0	--	--
3	22	21	0	0	0	0	0	--	--
3	22	22	0	0	0	0	0	--	--
3	22	23	0	0	0	0	0	--	--
3	22	24	0	0	0	0	0	--	--
3	23	1	0	0	0	0	0	--	--
3	23	2	0	0	0	0	0	--	--
3	23	3	0	0	0	0	0	--	--
3	23	4	0	0	0	0	0	--	--
3	23	5	0	0	0	0	0	--	--
3	23	6	1	0	1	0	0	--	--
3	23	7	69	98	55	2.646	1.674	1.99	90.19
3	23	8	272	395	134	10.665	5.481	14.22	98.99
3	23	9	488	666	134	17.982	8.397	26.14	108.72
3	23	10	669	784	137	21.168	10.881	37.3	120.54
3	23	11	792	840	138	22.68	12.555	46.96	136.1
3	23	12	804	637	277	17.199	14.5935	53.78	157.19
3	23	13	677	381	364	10.287	14.0535	55.92	183.14
3	23	14	411	85	347	2.295	10.233	52.56	208.32
3	23	15	375	88	318	2.376	9.3555	44.95	228.04
3	23	16	285	99	236	2.673	7.0335	34.85	242.58
3	23	17	152	73	130	1.971	3.807	23.47	253.81
3	23	18	21	0	21	0	0.567	11.47	263.26
3	23	19	0	0	0	0	0	-0.77	271.99
3	23	20	0	0	0	0	0	--	--
3	23	21	0	0	0	0	0	--	--
3	23	22	0	0	0	0	0	--	--
3	23	23	0	0	0	0	0	--	--
3	23	24	0	0	0	0	0	--	--
3	24	1	0	0	0	0	0	--	--
3	24	2	0	0	0	0	0	--	--
3	24	3	0	0	0	0	0	--	--
3	24	4	0	0	0	0	0	--	--
3	24	5	0	0	0	0	0	--	--
3	24	6	1	0	1	0	0	--	--
3	24	7	66	67	56	1.809	1.647	2.28	89.91
3	24	8	252	333	134	8.991	5.211	14.51	98.7

3	24	9	459	575	151	15.525	8.235	26.44	108.43
3	24	10	640	675	180	18.225	11.07	37.63	120.26
3	24	11	772	760	176	20.52	12.798	47.33	135.86
3	24	12	841	821	158	22.167	13.4865	54.17	157.1
3	24	13	840	847	142	22.869	13.257	56.31	183.31
3	24	14	767	819	143	22.113	12.285	52.9	208.68
3	24	15	616	718	151	19.386	10.3545	45.21	228.47
3	24	16	416	535	153	14.445	7.6815	35.07	243
3	24	17	200	294	111	7.938	4.1985	23.66	254.2
3	24	18	31	0	31	0	0.837	11.64	263.64
3	24	19	0	0	0	0	0	-0.61	272.36
3	24	20	0	0	0	0	0	--	--
3	24	21	0	0	0	0	0	--	--
3	24	22	0	0	0	0	0	--	--
3	24	23	0	0	0	0	0	--	--
3	24	24	0	0	0	0	0	--	--
3	25	1	0	0	0	0	0	--	--
3	25	2	0	0	0	0	0	--	--
3	25	3	0	0	0	0	0	--	--
3	25	4	0	0	0	0	0	--	--
3	25	5	0	0	0	0	0	--	--
3	25	6	2	0	2	0	0.054	--	--
3	25	7	61	30	56	0.81	1.5795	2.57	89.64
3	25	8	149	16	144	0.432	3.9555	14.8	98.42
3	25	9	325	138	250	3.726	7.7625	26.75	108.14
3	25	10	510	268	326	7.236	11.286	37.96	119.97
3	25	11	667	444	318	11.988	13.2975	47.7	135.62
3	25	12	717	386	395	10.422	15.012	54.57	157.01
3	25	13	709	384	391	10.368	14.85	56.7	183.48
3	25	14	642	416	324	11.232	13.041	53.23	209.06
3	25	15	553	500	228	13.5	10.5435	45.48	228.9
3	25	16	400	471	167	12.717	7.6545	35.28	243.41
3	25	17	207	351	100	9.477	4.1445	23.84	254.59
3	25	18	33	9	32	0.243	0.8775	11.8	264.01
3	25	19	0	0	0	0	0	-0.44	272.72
3	25	20	0	0	0	0	0	--	--
3	25	21	0	0	0	0	0	--	--
3	25	22	0	0	0	0	0	--	--
3	25	23	0	0	0	0	0	--	--
3	25	24	0	0	0	0	0	--	--
3	26	1	0	0	0	0	0	--	--
3	26	2	0	0	0	0	0	--	--
3	26	3	0	0	0	0	0	--	--
3	26	4	0	0	0	0	0	--	--
3	26	5	0	0	0	0	0	--	--
3	26	6	2	0	2	0	0.054	--	--
3	26	7	75	86	61	2.322	1.836	2.85	89.36
3	26	8	238	256	144	6.912	5.157	15.1	98.14
3	26	9	400	317	226	8.559	8.451	27.05	107.85
3	26	10	516	303	307	8.181	11.1105	38.3	119.69
3	26	11	574	212	406	5.724	13.23	48.06	135.38
3	26	12	658	288	416	7.776	14.499	54.97	156.91
3	26	13	686	340	404	9.18	14.715	57.09	183.65
3	26	14	651	415	333	11.205	13.284	53.56	209.44
3	26	15	552	502	224	13.554	10.476	45.74	229.33
3	26	16	396	390	203	10.53	8.0865	35.5	243.83
3	26	17	205	311	109	8.397	4.239	24.02	254.98
3	26	18	35	19	33	0.513	0.918	11.97	264.38
3	26	19	0	0	0	0	0	-0.28	273.09
3	26	20	0	0	0	0	0	--	--
3	26	21	0	0	0	0	0	--	--
3	26	22	0	0	0	0	0	--	--
3	26	23	0	0	0	0	0	--	--
3	26	24	0	0	0	0	0	--	--
3	27	1	0	0	0	0	0	--	--
3	27	2	0	0	0	0	0	--	--
3	27	3	0	0	0	0	0	--	--
3	27	4	0	0	0	0	0	--	--
3	27	5	0	0	0	0	0	--	--
3	27	6	3	0	3	0	0.081	--	--
3	27	7	84	124	64	3.348	1.998	3.14	89.08
3	27	8	293	470	120	12.69	5.5755	15.39	97.85
3	27	9	510	677	137	18.279	8.7345	27.36	107.56
3	27	10	691	794	139	21.438	11.205	38.62	119.4
3	27	11	815	879	115	23.733	12.555	48.42	135.13
3	27	12	853	820	162	22.14	13.7025	55.36	156.82
3	27	13	769	557	304	15.039	14.4855	57.47	183.83
3	27	14	553	275	341	7.425	12.069	53.89	209.82
3	27	15	451	192	325	5.184	10.476	46	229.77
3	27	16	314	105	262	2.835	7.776	35.7	244.24
3	27	17	159	98	128	2.646	3.8745	24.2	255.37

3	27	18	32	0	32	0	0.864	12.14	264.75
3	27	19	0	0	0	0	0	-0.11	273.45
3	27	20	0	0	0	0	0	--	--
3	27	21	0	0	0	0	0	--	--
3	27	22	0	0	0	0	0	--	--
3	27	23	0	0	0	0	0	--	--
3	27	24	0	0	0	0	0	--	--
3	28	1	0	0	0	0	0	--	--
3	28	2	0	0	0	0	0	--	--
3	28	3	0	0	0	0	0	--	--
3	28	4	0	0	0	0	0	--	--
3	28	5	0	0	0	0	0	--	--
3	28	6	3	0	3	0	0.081	--	--
3	28	7	86	119	66	3.213	2.052	3.43	88.8
3	28	8	285	413	131	11.151	5.616	15.68	97.57
3	28	9	487	620	143	16.74	8.505	27.66	107.27
3	28	10	646	655	188	17.685	11.259	38.95	119.11
3	28	11	746	637	237	17.199	13.2705	48.79	134.88
3	28	12	764	511	331	13.797	14.7825	55.76	156.72
3	28	13	708	425	352	11.475	14.31	57.86	184.01
3	28	14	590	294	362	7.938	12.852	54.21	210.21
3	28	15	492	290	300	7.83	10.692	46.26	230.2
3	28	16	349	275	210	7.425	7.5465	35.91	244.66
3	28	17	180	161	130	4.347	4.185	24.38	255.76
3	28	18	34	0	34	0	0.918	12.3	265.12
3	28	19	0	0	0	0	0	0.05	273.81
3	28	20	0	0	0	0	0	--	--
3	28	21	0	0	0	0	0	--	--
3	28	22	0	0	0	0	0	--	--
3	28	23	0	0	0	0	0	--	--
3	28	24	0	0	0	0	0	--	--
3	29	1	0	0	0	0	0	--	--
3	29	2	0	0	0	0	0	--	--
3	29	3	0	0	0	0	0	--	--
3	29	4	0	0	0	0	0	--	--
3	29	5	0	0	0	0	0	--	--
3	29	6	2	0	2	0	0.054	--	--
3	29	7	54	0	54	0	1.458	3.71	88.52
3	29	8	159	17	153	0.459	4.212	15.97	97.29
3	29	9	410	254	268	6.858	9.153	27.96	106.98
3	29	10	653	582	243	15.714	12.096	39.28	118.82
3	29	11	821	781	193	21.087	13.689	49.15	134.63
3	29	12	884	865	148	23.355	13.932	56.15	156.62
3	29	13	875	870	142	23.49	13.7295	58.24	184.2
3	29	14	794	859	127	23.193	12.4335	54.54	210.61
3	29	15	650	810	114	21.87	10.314	46.51	230.65
3	29	16	455	680	111	18.36	7.641	36.12	245.08
3	29	17	233	414	102	11.178	4.5225	24.56	256.15
3	29	18	41	47	36	1.269	1.0395	12.46	265.49
3	29	19	0	0	0	0	0	0.21	274.17
3	29	20	0	0	0	0	0	--	--
3	29	21	0	0	0	0	0	--	--
3	29	22	0	0	0	0	0	--	--
3	29	23	0	0	0	0	0	--	--
3	29	24	0	0	0	0	0	--	--
3	30	1	0	0	0	0	0	--	--
3	30	2	0	0	0	0	0	--	--
3	30	3	0	0	0	0	0	--	--
3	30	4	0	0	0	0	0	--	--
3	30	5	0	0	0	0	0	--	--
3	30	6	4	0	4	0	0.108	--	--
3	30	7	87	98	70	2.646	2.1195	4	88.25
3	30	8	280	356	143	9.612	5.7105	16.25	97
3	30	9	467	478	197	12.906	8.964	28.26	106.69
3	30	10	609	521	240	14.067	11.4615	39.6	118.52
3	30	11	691	449	329	12.123	13.77	49.51	134.37
3	30	12	740	453	354	12.231	14.769	56.54	156.52
3	30	13	730	452	349	12.204	14.5665	58.63	184.38
3	30	14	662	441	318	11.907	13.23	54.86	211.01
3	30	15	595	569	216	15.363	10.9485	46.76	231.09
3	30	16	439	519	175	14.013	8.289	36.32	245.5
3	30	17	231	407	101	10.989	4.482	24.73	256.54
3	30	18	42	48	37	1.296	1.0665	12.63	265.86
3	30	19	0	0	0	0	0	0.38	274.53
3	30	20	0	0	0	0	0	--	--
3	30	21	0	0	0	0	0	--	--
3	30	22	0	0	0	0	0	--	--
3	30	23	0	0	0	0	0	--	--
3	30	24	0	0	0	0	0	--	--
3	31	1	0	0	0	0	0	--	--
3	31	2	0	0	0	0	0	--	--

3	31	3	0	0	0	0	0	--	--
3	31	4	0	0	0	0	0	--	--
3	31	5	0	0	0	0	0	--	--
3	31	6	5	0	5	0	0.135	--	--
3	31	7	100	150	72	4.05	2.322	4.28	87.97
3	31	8	312	481	125	12.987	5.8995	16.54	96.72
3	31	9	530	684	141	18.468	9.0585	28.56	106.39
3	31	10	712	803	140	21.681	11.502	39.92	118.22
3	31	11	838	871	132	23.517	13.095	49.87	134.12
3	31	12	895	875	145	23.625	14.04	56.93	156.42
3	31	13	880	865	146	23.355	13.851	59.01	184.58
3	31	14	795	839	137	22.653	12.582	55.18	211.41
3	31	15	646	748	146	20.196	10.692	47.01	231.54
3	31	16	448	593	145	16.011	8.0055	36.52	245.92
3	31	17	228	367	110	9.909	4.563	24.91	256.93
3	31	18	43	49	38	1.323	1.0935	12.79	266.23
3	31	19	0	0	0	0	0	0.54	274.89
3	31	20	0	0	0	0	0	--	--
3	31	21	0	0	0	0	0	--	--
3	31	22	0	0	0	0	0	--	--
3	31	23	0	0	0	0	0	--	--
3	31	24	0	0	0	0	0	--	--
				114319	**68035**	**3086.61**	**2826.13**		

Appendix D: Data for April

Month	Day	Hour	Global Radiation (W/m^2)	Direct Radiation (W/m^2)	Diffuse Radiation (W/m^2)	CPV (W)	PV (W)	Elevation (deg)	Azimuth (deg)
4	1	1	0	0	0	0	0	--	--
4	1	2	0	0	0	0	0	--	--
4	1	3	0	0	0	0	0	--	--
4	1	4	0	0	0	0	0	--	--
4	1	5	0	0	0	0	0	--	--
4	1	6	2	0	2	0	0.054	--	--
4	1	7	53	0	53	0	1.431	4.56	87.7
4	1	8	166	8	163	0.216	4.4415	16.82	96.43
4	1	9	399	255	253	6.885	8.802	28.86	106.1
4	1	10	632	509	269	13.743	12.1635	40.24	117.93
4	1	11	811	713	232	19.251	14.0805	50.22	133.85
4	1	12	842	685	255	18.495	14.8095	57.32	156.31
4	1	13	794	468	398	12.636	16.092	59.39	184.77
4	1	14	672	350	398	9.45	14.445	55.49	211.82
4	1	15	570	523	221	14.121	10.6785	47.26	231.99
4	1	16	413	354	232	9.558	8.7075	36.72	246.35
4	1	17	219	289	126	7.803	4.6575	25.08	257.32
4	1	18	43	27	40	0.729	1.1205	12.95	266.6
4	1	19	0	0	0	0	0	0.7	275.25
4	1	20	0	0	0	0	0	--	--
4	1	21	0	0	0	0	0	--	--
4	1	22	0	0	0	0	0	--	--
4	1	23	0	0	0	0	0	--	--
4	1	24	0	0	0	0	0	--	--
4	2	1	0	0	0	0	0	--	--
4	2	2	0	0	0	0	0	--	--
4	2	3	0	0	0	0	0	--	--
4	2	4	0	0	0	0	0	--	--
4	2	5	0	0	0	0	0	--	--
4	2	6	5	0	5	0	0.135	--	--
4	2	7	103	133	78	3.591	2.4435	4.85	87.42
4	2	8	322	443	147	11.961	6.3315	17.11	96.15
4	2	9	544	670	160	18.09	9.504	29.15	105.8
4	2	10	729	790	163	21.33	12.042	40.56	117.62
4	2	11	857	899	124	24.273	13.2435	50.58	133.59
4	2	12	895	853	160	23.031	14.2425	57.71	156.21
4	2	13	806	549	339	14.823	15.4575	59.77	184.97
4	2	14	579	309	336	8.343	12.3525	55.81	212.24
4	2	15	506	257	334	6.939	11.34	47.51	232.44
4	2	16	374	247	247	6.669	8.3835	36.92	246.77
4	2	17	202	140	157	3.78	4.8465	25.25	257.71
4	2	18	41	11	40	0.297	1.0935	13.11	266.96
4	2	19	0	0	0	0	0	0.86	275.61
4	2	20	0	0	0	0	0	--	--
4	2	21	0	0	0	0	0	--	--
4	2	22	0	0	0	0	0	--	--
4	2	23	0	0	0	0	0	--	--
4	2	24	0	0	0	0	0	--	--
4	3	1	0	0	0	0	0	--	--
4	3	2	0	0	0	0	0	--	--
4	3	3	0	0	0	0	0	--	--
4	3	4	0	0	0	0	0	--	--
4	3	5	0	0	0	0	0	--	--
4	3	6	3	0	3	0	0.081	--	--
4	3	7	58	0	58	0	1.566	5.13	87.15
4	3	8	172	8	169	0.216	4.6035	17.39	95.87
4	3	9	433	341	236	9.207	9.0315	29.45	105.51
4	3	10	678	604	243	16.308	12.4335	40.88	117.32
4	3	11	844	798	190	21.546	13.959	50.93	133.32
4	3	12	902	872	148	23.544	14.175	58.1	156.1
4	3	13	891	865	151	23.355	14.067	60.15	185.17
4	3	14	807	858	130	23.166	12.6495	56.12	212.66
4	3	15	665	828	106	22.356	10.4085	47.75	232.89
4	3	16	467	688	112	18.576	7.8165	37.12	247.19
4	3	17	243	423	104	11.421	4.6845	25.42	258.1
4	3	18	47	67	39	1.809	1.161	13.27	267.33
4	3	19	0	0	0	0	0	1.02	275.96
4	3	20	0	0	0	0	0	--	--
4	3	21	0	0	0	0	0	--	--
4	3	22	0	0	0	0	0	--	--
4	3	23	0	0	0	0	0	--	--
4	3	24	0	0	0	0	0	--	--
4	4	1	0	0	0	0	0	--	--
4	4	2	0	0	0	0	0	--	--

4	4	3	0	0	0	0	0	--	--
4	4	4	0	0	0	0	0	--	--
4	4	5	0	0	0	0	0	--	--
4	4	6	6	0	6	0	0.162	--	--
4	4	7	112	201	72	5.427	2.484	5.4	86.88
4	4	8	327	494	128	13.338	6.1425	17.67	95.58
4	4	9	545	692	143	18.684	9.288	29.74	105.21
4	4	10	725	801	144	21.627	11.7315	41.19	117.02
4	4	11	849	866	137	23.382	13.311	51.28	133.05
4	4	12	905	869	151	23.463	14.256	58.48	155.98
4	4	13	890	863	150	23.301	14.04	60.52	185.37
4	4	14	804	840	139	22.68	12.7305	56.43	213.08
4	4	15	632	636	202	17.172	11.259	47.99	233.35
4	4	16	402	374	208	10.098	8.235	37.31	247.62
4	4	17	172	115	134	3.105	4.131	25.59	258.49
4	4	18	41	2	40	0.054	1.0935	13.43	267.69
4	4	19	0	0	0	0	0	1.18	276.32
4	4	20	0	0	0	0	0	--	--
4	4	21	0	0	0	0	0	--	--
4	4	22	0	0	0	0	0	--	--
4	4	23	0	0	0	0	0	--	--
4	4	24	0	0	0	0	0	--	--
4	5	1	0	0	0	0	0	--	--
4	5	2	0	0	0	0	0	--	--
4	5	3	0	0	0	0	0	--	--
4	5	4	0	0	0	0	0	--	--
4	5	5	0	0	0	0	0	--	--
4	5	6	6	0	6	0	0.162	--	--
4	5	7	96	79	80	2.133	2.376	5.68	86.6
4	5	8	233	107	190	2.889	5.7105	17.95	95.3
4	5	9	386	158	294	4.266	9.18	30.03	104.91
4	5	10	513	238	340	6.426	11.5155	41.5	116.71
4	5	11	599	164	464	4.428	14.3505	51.62	132.77
4	5	12	683	285	435	7.695	15.093	58.86	155.87
4	5	13	711	343	416	9.261	15.2145	60.9	185.58
4	5	14	673	410	347	11.07	13.77	56.74	213.51
4	5	15	551	420	266	11.34	11.0295	48.23	233.8
4	5	16	389	352	205	9.504	8.019	37.5	248.04
4	5	17	203	146	155	3.942	4.833	25.76	258.88
4	5	18	46	30	42	0.81	1.188	13.58	268.06
4	5	19	0	0	0	0	0	1.35	276.67
4	5	20	0	0	0	0	0	--	--
4	5	21	0	0	0	0	0	--	--
4	5	22	0	0	0	0	0	--	--
4	5	23	0	0	0	0	0	--	--
4	5	24	0	0	0	0	0	--	--
4	6	1	0	0	0	0	0	--	--
4	6	2	0	0	0	0	0	--	--
4	6	3	0	0	0	0	0	--	--
4	6	4	0	0	0	0	0	--	--
4	6	5	0	0	0	0	0	--	--
4	6	6	7	0	7	0	0.189	--	--
4	6	7	115	155	83	4.185	2.673	5.95	86.33
4	6	8	332	479	135	12.933	6.3045	18.22	95.01
4	6	9	537	673	140	18.171	9.1395	30.31	104.61
4	6	10	695	695	186	18.765	11.8935	41.81	116.4
4	6	11	779	601	281	16.227	14.31	51.97	132.49
4	6	12	850	654	279	17.658	15.2415	59.24	155.75
4	6	13	852	722	229	19.494	14.5935	61.27	185.79
4	6	14	785	757	181	20.439	13.041	57.04	213.94
4	6	15	636	666	182	17.982	11.043	48.46	234.26
4	6	16	440	514	171	13.878	8.2485	37.69	248.46
4	6	17	227	312	122	8.424	4.7115	25.92	259.26
4	6	18	51	41	46	1.107	1.3095	13.74	268.42
4	6	19	0	0	0	0	0	1.51	277.02
4	6	20	0	0	0	0	0	--	--
4	6	21	0	0	0	0	0	--	--
4	6	22	0	0	0	0	0	--	--
4	6	23	0	0	0	0	0	--	--
4	6	24	0	0	0	0	0	--	--
4	7	1	0	0	0	0	0	--	--
4	7	2	0	0	0	0	0	--	--
4	7	3	0	0	0	0	0	--	--
4	7	4	0	0	0	0	0	--	--
4	7	5	0	0	0	0	0	--	--
4	7	6	9	0	9	0	0.243	--	--
4	7	7	123	159	89	4.293	2.862	6.23	86.06
4	7	8	339	493	134	13.311	6.3855	18.49	94.73
4	7	9	555	725	124	19.575	9.1665	30.6	104.31
4	7	10	733	809	136	21.843	11.7315	42.12	116.09
4	7	11	855	873	127	23.571	13.257	52.31	132.21

4	7	12	911	881	138	23.787	14.1615	59.62	155.63
4	7	13	892	866	142	23.382	13.959	61.64	186
4	7	14	805	839	134	22.653	12.6765	57.34	214.38
4	7	15	661	772	132	20.844	10.7055	48.69	234.72
4	7	16	466	670	113	18.09	7.8165	37.88	248.88
4	7	17	246	435	99	11.745	4.6575	26.09	259.65
4	7	18	53	60	46	1.62	1.3365	13.9	268.78
4	7	19	0	0	0	0	0	1.67	277.37
4	7	20	0	0	0	0	0	--	--
4	7	21	0	0	0	0	0	--	--
4	7	22	0	0	0	0	0	--	--
4	7	23	0	0	0	0	0	--	--
4	7	24	0	0	0	0	0	--	--
4	8	1	0	0	0	0	0	--	--
4	8	2	0	0	0	0	0	--	--
4	8	3	0	0	0	0	0	--	--
4	8	4	0	0	0	0	0	--	--
4	8	5	0	0	0	0	0	--	--
4	8	6	6	0	6	0	0.162	--	--
4	8	7	75	7	74	0.189	2.0115	6.5	85.79
4	8	8	182	21	173	0.567	4.7925	18.77	94.45
4	8	9	296	26	280	0.702	7.776	30.88	104.01
4	8	10	391	62	345	1.674	9.936	42.42	115.78
4	8	11	456	76	392	2.052	11.448	52.65	131.92
4	8	12	486	77	418	2.079	12.204	60	155.5
4	8	13	478	77	412	2.079	12.015	62	186.22
4	8	14	434	76	373	2.052	10.8945	57.64	214.82
4	8	15	356	35	332	0.945	9.288	48.92	235.18
4	8	16	253	43	230	1.161	6.5205	38.07	249.3
4	8	17	134	12	130	0.324	3.564	26.25	260.03
4	8	18	29	0	29	0	0.783	14.05	269.14
4	8	19	0	0	0	0	0	1.82	277.71
4	8	20	0	0	0	0	0	--	--
4	8	21	0	0	0	0	0	--	--
4	8	22	0	0	0	0	0	--	--
4	8	23	0	0	0	0	0	--	--
4	8	24	0	0	0	0	0	--	--
4	9	1	0	0	0	0	0	--	--
4	9	2	0	0	0	0	0	--	--
4	9	3	0	0	0	0	0	--	--
4	9	4	0	0	0	0	0	--	--
4	9	5	0	0	0	0	0	--	--
4	9	6	8	0	8	0	0.216	--	--
4	9	7	119	177	80	4.779	2.6865	6.77	85.52
4	9	8	336	440	148	11.88	6.534	19.03	94.16
4	9	9	504	514	194	13.878	9.423	31.15	103.71
4	9	10	562	270	361	7.29	12.4605	42.72	115.46
4	9	11	462	92	384	2.484	11.421	52.98	131.63
4	9	12	491	54	443	1.458	12.609	60.37	155.38
4	9	13	483	54	436	1.458	12.4065	62.37	186.44
4	9	14	439	54	396	1.458	11.2725	57.94	215.26
4	9	15	508	252	334	6.804	11.367	49.15	235.65
4	9	16	424	406	208	10.962	8.532	38.25	249.73
4	9	17	245	334	131	9.018	5.076	26.41	260.41
4	9	18	55	56	47	1.512	1.377	14.21	269.49
4	9	19	1	0	1	0	0	1.98	278.06
4	9	20	0	0	0	0	0	--	--
4	9	21	0	0	0	0	0	--	--
4	9	22	0	0	0	0	0	--	--
4	9	23	0	0	0	0	0	--	--
4	9	24	0	0	0	0	0	--	--
4	10	1	0	0	0	0	0	--	--
4	10	2	0	0	0	0	0	--	--
4	10	3	0	0	0	0	0	--	--
4	10	4	0	0	0	0	0	--	--
4	10	5	0	0	0	0	0	--	--
4	10	6	8	0	8	0	0.216	--	--
4	10	7	88	41	79	1.107	2.2545	7.03	85.25
4	10	8	187	11	182	0.297	4.9815	19.3	93.88
4	10	9	301	27	285	0.729	7.911	31.43	103.41
4	10	10	395	62	349	1.674	10.044	43.02	115.15
4	10	11	459	76	395	2.052	11.529	53.32	131.34
4	10	12	490	77	422	2.079	12.312	60.74	155.24
4	10	13	482	77	415	2.079	12.1095	62.73	186.66
4	10	14	436	75	375	2.025	10.9485	58.23	215.71
4	10	15	358	35	334	0.945	9.342	49.38	236.11
4	10	16	254	29	238	0.783	6.642	38.43	250.15
4	10	17	135	12	131	0.324	3.591	26.57	260.79
4	10	18	31	0	31	0	0.837	14.36	269.85
4	10	19	0	0	0	0	0	2.14	278.4
4	10	20	0	0	0	0	0	--	--

4	10	21	0	0	0	0	0	--	--
4	10	22	0	0	0	0	0	--	--
4	10	23	0	0	0	0	0	--	--
4	10	24	0	0	0	0	0	--	--
4	11	1	0	0	0	0	0	--	--
4	11	2	0	0	0	0	0	--	--
4	11	3	0	0	0	0	0	--	--
4	11	4	0	0	0	0	0	--	--
4	11	5	0	0	0	0	0	--	--
4	11	6	6	0	6	0	0.162	--	--
4	11	7	73	0	73	0	1.971	7.3	84.98
4	11	8	189	21	180	0.567	4.9815	19.56	93.6
4	11	9	304	27	287	0.729	7.9785	31.7	103.11
4	11	10	398	63	351	1.701	10.1115	43.31	114.83
4	11	11	463	77	398	2.079	11.6235	53.65	131.04
4	11	12	426	5	422	0.135	11.448	61.11	155.11
4	11	13	349	3	347	0.081	9.396	63.09	186.88
4	11	14	247	3	244	0.081	6.6285	58.52	216.16
4	11	15	259	20	245	0.54	6.804	49.6	236.57
4	11	16	221	14	213	0.378	5.859	38.61	250.56
4	11	17	136	6	134	0.162	3.645	26.73	261.17
4	11	18	32	0	32	0	0.864	14.51	270.2
4	11	19	0	0	0	0	0	2.3	278.74
4	11	20	0	0	0	0	0	--	--
4	11	21	0	0	0	0	0	--	--
4	11	22	0	0	0	0	0	--	--
4	11	23	0	0	0	0	0	--	--
4	11	24	0	0	0	0	0	--	--
4	12	1	0	0	0	0	0	--	--
4	12	2	0	0	0	0	0	--	--
4	12	3	0	0	0	0	0	--	--
4	12	4	0	0	0	0	0	--	--
4	12	5	0	0	0	0	0	--	--
4	12	6	10	0	10	0	0.27	--	--
4	12	7	107	66	92	1.782	2.6865	7.56	84.71
4	12	8	256	134	197	3.618	6.1155	19.82	93.32
4	12	9	435	202	311	5.454	10.071	31.97	102.8
4	12	10	597	332	346	8.964	12.7305	43.6	114.51
4	12	11	724	447	345	12.069	14.4315	53.97	130.74
4	12	12	737	363	413	9.801	15.525	61.48	154.97
4	12	13	686	292	429	7.884	15.0525	63.45	187.1
4	12	14	583	219	405	5.913	13.338	58.81	216.61
4	12	15	444	132	352	3.564	10.746	49.82	237.03
4	12	16	288	82	243	2.214	7.1685	38.79	250.98
4	12	17	138	17	132	0.459	3.645	26.89	261.55
4	12	18	37	0	37	0	0.999	14.67	270.55
4	12	19	1	0	1	0	0	2.46	279.07
4	12	20	0	0	0	0	0	--	--
4	12	21	0	0	0	0	0	--	--
4	12	22	0	0	0	0	0	--	--
4	12	23	0	0	0	0	0	--	--
4	12	24	0	0	0	0	0	--	--
4	13	1	0	0	0	0	0	--	--
4	13	2	0	0	0	0	0	--	--
4	13	3	0	0	0	0	0	--	--
4	13	4	0	0	0	0	0	--	--
4	13	5	0	0	0	0	0	--	--
4	13	6	13	0	13	0	0.351	--	--
4	13	7	147	185	102	4.995	3.3615	7.82	84.45
4	13	8	366	514	139	13.878	6.8175	20.08	93.03
4	13	9	582	691	155	18.657	9.9495	32.24	102.5
4	13	10	759	796	156	21.492	12.3525	43.89	114.19
4	13	11	879	855	150	23.085	13.8915	54.3	130.43
4	13	12	933	861	162	23.247	14.7825	61.84	154.82
4	13	13	915	880	138	23.76	14.2155	63.8	187.33
4	13	14	829	864	124	23.328	12.8655	59.09	217.06
4	13	15	684	796	127	21.492	10.9485	50.04	237.5
4	13	16	486	696	109	18.792	8.0325	38.97	251.4
4	13	17	262	418	115	11.286	5.0895	27.04	261.92
4	13	18	63	106	48	2.862	1.4985	14.82	270.9
4	13	19	1	0	1	0	0.027	2.62	279.4
4	13	20	0	0	0	0	0	--	--
4	13	21	0	0	0	0	0	--	--
4	13	22	0	0	0	0	0	--	--
4	13	23	0	0	0	0	0	--	--
4	13	24	0	0	0	0	0	--	--
4	14	1	0	0	0	0	0	--	--
4	14	2	0	0	0	0	0	--	--
4	14	3	0	0	0	0	0	--	--
4	14	4	0	0	0	0	0	--	--
4	14	5	0	0	0	0	0	--	--

4	14	6	12	0	12	0	0.324	--	--
4	14	7	124	134	91	3.618	2.9025	8.07	84.18
4	14	8	305	268	186	7.236	6.6285	20.33	92.75
4	14	9	519	456	235	12.312	10.179	32.5	102.2
4	14	10	709	625	232	16.875	12.7035	44.17	113.86
4	14	11	843	733	216	19.791	14.2965	54.61	130.12
4	14	12	901	776	204	20.952	14.9175	62.2	154.67
4	14	13	883	767	203	20.709	14.661	64.16	187.56
4	14	14	803	744	194	20.088	13.4595	59.37	217.52
4	14	15	668	736	151	19.872	11.0565	50.25	237.96
4	14	16	479	660	121	17.82	8.1	39.14	251.81
4	14	17	261	430	109	11.61	4.995	27.2	262.29
4	14	18	64	73	53	1.971	1.5795	14.97	271.24
4	14	19	1	0	1	0	0.027	2.77	279.73
4	14	20	0	0	0	0	0	--	--
4	14	21	0	0	0	0	0	--	--
4	14	22	0	0	0	0	0	--	--
4	14	23	0	0	0	0	0	--	--
4	14	24	0	0	0	0	0	--	--
4	15	1	0	0	0	0	0	--	--
4	15	2	0	0	0	0	0	--	--
4	15	3	0	0	0	0	0	--	--
4	15	4	0	0	0	0	0	--	--
4	15	5	0	0	0	0	0	--	--
4	15	6	15	0	15	0	0.405	--	--
4	15	7	154	192	106	5.184	3.51	8.33	83.92
4	15	8	374	519	141	14.013	6.9525	20.59	92.47
4	15	9	588	728	133	19.656	9.7335	32.76	101.89
4	15	10	761	799	149	21.573	12.285	44.45	113.54
4	15	11	874	844	149	22.788	13.8105	54.93	129.81
4	15	12	919	825	175	22.275	14.769	62.55	154.52
4	15	13	895	799	186	21.573	14.5935	64.51	187.79
4	15	14	802	736	198	19.872	13.5	59.65	217.98
4	15	15	625	545	241	14.715	11.691	50.46	238.42
4	15	16	406	316	233	8.532	8.6265	39.31	252.22
4	15	17	188	111	148	2.997	4.536	27.35	262.66
4	15	18	55	16	53	0.432	1.458	15.12	271.58
4	15	19	1	0	1	0	0.027	2.93	280.06
4	15	20	0	0	0	0	0	--	--
4	15	21	0	0	0	0	0	--	--
4	15	22	0	0	0	0	0	--	--
4	15	23	0	0	0	0	0	--	--
4	15	24	0	0	0	0	0	--	--
4	16	1	0	0	0	0	0	--	--
4	16	2	0	0	0	0	0	--	--
4	16	3	0	0	0	0	0	--	--
4	16	4	0	0	0	0	0	--	--
4	16	5	0	0	0	0	0	--	--
4	16	6	16	0	16	0	0.432	--	--
4	16	7	158	198	108	5.346	3.591	8.57	83.65
4	16	8	379	525	141	14.175	7.02	20.83	92.19
4	16	9	595	694	158	18.738	10.1655	33.01	101.59
4	16	10	773	814	147	21.978	12.42	44.73	113.21
4	16	11	889	854	153	23.058	14.067	55.24	129.49
4	16	12	943	862	163	23.274	14.931	62.91	154.36
4	16	13	924	857	161	23.139	14.6475	64.85	188.02
4	16	14	835	859	128	23.193	13.0005	59.93	218.45
4	16	15	663	681	182	18.387	11.4075	50.67	238.88
4	16	16	407	316	234	8.532	8.6535	39.48	252.63
4	16	17	142	18	136	0.486	3.753	27.51	263.03
4	16	18	51	1	51	0.027	1.377	15.27	271.92
4	16	19	1	0	1	0	0.027	3.09	280.39
4	16	20	0	0	0	0	0	--	--
4	16	21	0	0	0	0	0	--	--
4	16	22	0	0	0	0	0	--	--
4	16	23	0	0	0	0	0	--	--
4	16	24	0	0	0	0	0	--	--
4	17	1	0	0	0	0	0	--	--
4	17	2	0	0	0	0	0	--	--
4	17	3	0	0	0	0	0	--	--
4	17	4	0	0	0	0	0	--	--
4	17	5	0	0	0	0	0	--	--
4	17	6	17	0	17	0	0.459	--	--
4	17	7	161	199	110	5.373	3.6585	8.82	83.39
4	17	8	382	524	143	14.148	7.0875	21.08	91.91
4	17	9	597	732	133	19.764	9.855	33.26	101.29
4	17	10	774	807	151	21.789	12.4875	45	112.88
4	17	11	890	847	157	22.869	14.1345	55.55	129.16
4	17	12	941	882	141	23.814	14.607	63.26	154.2
4	17	13	923	872	145	23.544	14.418	65.2	188.25
4	17	14	837	856	130	23.112	13.0545	60.2	218.91

4	17	15	672	719	163	19.413	11.2725	50.88	239.35
4	17	16	438	401	218	10.827	8.856	39.65	253.04
4	17	17	190	107	152	2.889	4.617	27.66	263.39
4	17	18	60	25	56	0.675	1.566	15.42	272.26
4	17	19	2	0	2	0	0.054	3.24	280.71
4	17	20	0	0	0	0	0	--	--
4	17	21	0	0	0	0	0	--	--
4	17	22	0	0	0	0	0	--	--
4	17	23	0	0	0	0	0	--	--
4	17	24	0	0	0	0	0	--	--
4	18	1	0	0	0	0	0	--	--
4	18	2	0	0	0	0	0	--	--
4	18	3	0	0	0	0	0	--	--
4	18	4	0	0	0	0	0	--	--
4	18	5	0	0	0	0	0	--	--
4	18	6	13	0	13	0	0.351	--	--
4	18	7	108	99	82	2.673	2.565	9.07	83.13
4	18	8	205	23	194	0.621	5.3865	21.32	91.63
4	18	9	318	27	301	0.729	8.3565	33.51	100.98
4	18	10	411	74	354	1.998	10.3275	45.27	112.55
4	18	11	474	76	408	2.052	11.907	55.85	128.84
4	18	12	562	122	451	3.294	13.6755	63.6	154.03
4	18	13	606	163	460	4.401	14.391	65.54	188.49
4	18	14	594	207	423	5.589	13.7295	60.47	219.38
4	18	15	617	496	264	13.392	11.8935	51.08	239.81
4	18	16	483	641	129	17.307	8.262	39.82	253.45
4	18	17	272	447	109	12.069	5.1435	27.81	263.76
4	18	18	71	91	57	2.457	1.728	15.57	272.59
4	18	19	2	0	2	0	0.054	3.4	281.03
4	18	20	0	0	0	0	0	--	--
4	18	21	0	0	0	0	0	--	--
4	18	22	0	0	0	0	0	--	--
4	18	23	0	0	0	0	0	--	--
4	18	24	0	0	0	0	0	--	--
4	19	1	0	0	0	0	0	--	--
4	19	2	0	0	0	0	0	--	--
4	19	3	0	0	0	0	0	--	--
4	19	4	0	0	0	0	0	--	--
4	19	5	0	0	0	0	0	--	--
4	19	6	18	0	18	0	0.486	--	--
4	19	7	169	208	114	5.616	3.8205	9.31	82.87
4	19	8	391	533	143	14.391	7.209	21.56	91.35
4	19	9	599	716	141	19.332	9.99	33.76	100.68
4	19	10	763	796	144	21.492	12.2445	45.53	112.22
4	19	11	861	756	202	20.412	14.3505	56.15	128.51
4	19	12	863	584	330	15.768	16.1055	63.95	153.85
4	19	13	770	444	371	11.988	15.4035	65.87	188.72
4	19	14	595	268	372	7.236	13.0545	60.73	219.85
4	19	15	454	131	361	3.537	11.0025	51.28	240.26
4	19	16	297	82	251	2.214	7.398	39.99	253.85
4	19	17	146	18	139	0.486	3.8475	27.96	264.12
4	19	18	61	17	58	0.459	1.6065	15.71	272.92
4	19	19	2	0	2	0	0.054	3.56	281.34
4	19	20	0	0	0	0	0	--	--
4	19	21	0	0	0	0	0	--	--
4	19	22	0	0	0	0	0	--	--
4	19	23	0	0	0	0	0	--	--
4	19	24	0	0	0	0	0	--	--
4	20	1	0	0	0	0	0	--	--
4	20	2	0	0	0	0	0	--	--
4	20	3	0	0	0	0	0	--	--
4	20	4	0	0	0	0	0	--	--
4	20	5	0	0	0	0	0	--	--
4	20	6	14	0	14	0	0.378	--	--
4	20	7	122	62	106	1.674	3.078	9.54	82.61
4	20	8	281	152	209	4.104	6.615	21.79	91.07
4	20	9	459	203	328	5.481	10.6245	34	100.37
4	20	10	622	332	363	8.964	13.2975	45.79	111.88
4	20	11	749	423	379	11.421	15.228	56.44	128.17
4	20	12	879	580	348	15.66	16.5645	64.29	153.68
4	20	13	904	743	235	20.061	15.3765	66.21	188.96
4	20	14	837	835	143	22.545	13.23	60.99	220.32
4	20	15	692	769	142	20.763	11.259	51.48	240.72
4	20	16	495	673	120	18.171	8.3025	40.15	254.25
4	20	17	274	410	123	11.07	5.3595	28.11	264.47
4	20	18	74	94	59	2.538	1.7955	15.86	273.25
4	20	19	2	0	2	0	0.054	3.71	281.65
4	20	20	0	0	0	0	0	--	--
4	20	21	0	0	0	0	0	--	--
4	20	22	0	0	0	0	0	--	--
4	20	23	0	0	0	0	0	--	--

4	20	24	0	0	0	0	0	--	--
4	21	1	0	0	0	0	0	--	--
4	21	2	0	0	0	0	0	--	--
4	21	3	0	0	0	0	0	--	--
4	21	4	0	0	0	0	0	--	--
4	21	5	0	0	0	0	0	--	--
4	21	6	20	0	20	0	0.54	--	--
4	21	7	176	215	118	5.805	3.969	9.78	82.35
4	21	8	399	539	144	14.553	7.3305	22.02	90.8
4	21	9	612	693	164	18.711	10.476	34.23	100.07
4	21	10	789	812	152	21.924	12.7035	46.04	111.55
4	21	11	908	864	151	23.328	14.2965	56.73	127.83
4	21	12	961	914	123	24.678	14.634	64.62	153.49
4	21	13	937	857	163	23.139	14.85	66.54	189.19
4	21	14	852	849	144	22.923	13.446	61.25	220.79
4	21	15	704	803	128	21.681	11.232	51.68	241.18
4	21	16	506	684	124	18.468	8.505	40.31	254.65
4	21	17	281	437	120	11.799	5.4135	28.25	264.82
4	21	18	77	136	55	3.672	1.782	16.01	273.57
4	21	19	2	0	2	0	0.054	3.87	281.96
4	21	20	0	0	0	0	0	--	--
4	21	21	0	0	0	0	0	--	--
4	21	22	0	0	0	0	0	--	--
4	21	23	0	0	0	0	0	--	--
4	21	24	0	0	0	0	0	--	--
4	22	1	0	0	0	0	0	--	--
4	22	2	0	0	0	0	0	--	--
4	22	3	0	0	0	0	0	--	--
4	22	4	0	0	0	0	0	--	--
4	22	5	0	0	0	0	0	--	--
4	22	6	21	0	21	0	0.567	--	--
4	22	7	179	214	120	5.778	4.0365	10.01	82.1
4	22	8	401	537	146	14.499	7.3845	22.25	90.52
4	22	9	609	713	145	19.251	10.179	34.46	99.77
4	22	10	762	735	183	19.845	12.7575	46.29	111.21
4	22	11	829	593	308	16.011	15.3495	57.02	127.49
4	22	12	795	392	435	10.584	16.605	64.95	153.3
4	22	13	661	271	415	7.317	14.526	66.87	189.43
4	22	14	451	86	379	2.322	11.205	61.51	221.26
4	22	15	373	35	347	0.945	9.72	51.87	241.63
4	22	16	268	30	252	0.81	7.02	40.47	255.04
4	22	17	149	13	144	0.351	3.9555	28.4	265.17
4	22	18	62	14	60	0.378	1.647	16.15	273.89
4	22	19	3	0	3	0	0.081	4.02	282.26
4	22	20	0	0	0	0	0	--	--
4	22	21	0	0	0	0	0	--	--
4	22	22	0	0	0	0	0	--	--
4	22	23	0	0	0	0	0	--	--
4	22	24	0	0	0	0	0	--	--
4	23	1	0	0	0	0	0	--	--
4	23	2	0	0	0	0	0	--	--
4	23	3	0	0	0	0	0	--	--
4	23	4	0	0	0	0	0	--	--
4	23	5	0	0	0	0	0	--	--
4	23	6	22	0	22	0	0.594	--	--
4	23	7	178	199	122	5.373	4.05	10.23	81.84
4	23	8	374	421	172	11.367	7.371	22.47	90.24
4	23	9	520	385	269	10.395	10.6515	34.69	99.46
4	23	10	562	248	365	6.696	12.5145	46.54	110.88
4	23	11	485	81	413	2.187	12.123	57.3	127.15
4	23	12	510	93	424	2.511	12.609	65.28	153.1
4	23	13	499	92	415	2.484	12.339	67.19	189.67
4	23	14	453	52	410	1.404	11.6505	61.76	221.73
4	23	15	586	354	331	9.558	12.3795	52.06	242.08
4	23	16	358	169	263	4.563	8.3835	40.63	255.44
4	23	17	150	19	143	0.513	3.9555	28.55	265.52
4	23	18	52	0	52	0	1.404	16.29	274.21
4	23	19	2	0	2	0	0.054	4.17	282.56
4	23	20	0	0	0	0	0	--	--
4	23	21	0	0	0	0	0	--	--
4	23	22	0	0	0	0	0	--	--
4	23	23	0	0	0	0	0	--	--
4	23	24	0	0	0	0	0	--	--
4	24	1	0	0	0	0	0	--	--
4	24	2	0	0	0	0	0	--	--
4	24	3	0	0	0	0	0	--	--
4	24	4	0	0	0	0	0	--	--
4	24	5	0	0	0	0	0	--	--
4	24	6	23	0	23	0	0.621	--	--
4	24	7	188	227	123	6.129	4.1985	10.46	81.59
4	24	8	411	527	157	14.229	7.668	22.69	89.97

4	24	9	624	701	164	18.927	10.638	34.91	99.16
4	24	10	798	813	154	21.951	12.852	46.78	110.54
4	24	11	914	857	156	23.139	14.445	57.58	126.79
4	24	12	963	899	133	24.273	14.796	65.6	152.9
4	24	13	942	889	133	24.003	14.5125	67.51	189.9
4	24	14	847	814	163	21.978	13.635	62.01	222.2
4	24	15	681	642	216	17.334	12.1095	52.25	242.53
4	24	16	464	496	184	13.392	8.748	40.79	255.82
4	24	17	236	216	155	5.832	5.2785	28.69	265.86
4	24	18	68	31	63	0.837	1.7685	16.44	274.52
4	24	19	3	0	3	0	0.081	4.33	282.86
4	24	20	0	0	0	0	0	--	--
4	24	21	0	0	0	0	0	--	--
4	24	22	0	0	0	0	0	--	--
4	24	23	0	0	0	0	0	--	--
4	24	24	0	0	0	0	0	--	--
4	25	1	0	0	0	0	0	--	--
4	25	2	0	0	0	0	0	--	--
4	25	3	0	0	0	0	0	--	--
4	25	4	0	0	0	0	0	--	--
4	25	5	0	0	0	0	0	--	--
4	25	6	19	0	19	0	0.513	--	--
4	25	7	144	95	117	2.565	3.5235	10.67	81.33
4	25	8	295	147	223	3.969	6.993	22.9	89.7
4	25	9	545	424	265	11.448	10.935	35.13	98.86
4	25	10	767	658	244	17.766	13.6485	47.01	110.2
4	25	11	912	781	220	21.087	15.282	57.85	126.44
4	25	12	968	905	130	24.435	14.823	65.92	152.69
4	25	13	949	905	125	24.435	14.499	67.83	190.14
4	25	14	860	849	145	22.923	13.5675	62.25	222.67
4	25	15	708	787	137	21.249	11.4075	52.43	242.97
4	25	16	511	698	115	18.846	8.451	40.94	256.21
4	25	17	287	458	113	12.366	5.4	28.83	266.2
4	25	18	83	134	60	3.618	1.9305	16.58	274.83
4	25	19	3	0	3	0	0.081	4.48	283.15
4	25	20	0	0	0	0	0	--	--
4	25	21	0	0	0	0	0	--	--
4	25	22	0	0	0	0	0	--	--
4	25	23	0	0	0	0	0	--	--
4	25	24	0	0	0	0	0	--	--
4	26	1	0	0	0	0	0	--	--
4	26	2	0	0	0	0	0	--	--
4	26	3	0	0	0	0	0	--	--
4	26	4	0	0	0	0	0	--	--
4	26	5	0	0	0	0	0	--	--
4	26	6	23	0	23	0	0.621	--	--
4	26	7	173	187	118	5.049	3.9285	10.89	81.08
4	26	8	346	300	199	8.1	7.3575	23.11	89.42
4	26	9	476	265	301	7.155	10.4895	35.35	98.56
4	26	10	528	156	403	4.212	12.5685	47.24	109.86
4	26	11	492	83	418	2.241	12.285	58.11	126.08
4	26	12	634	184	463	4.968	14.8095	66.23	152.47
4	26	13	712	357	386	9.639	14.823	68.14	190.38
4	26	14	713	414	363	11.178	14.526	62.5	223.14
4	26	15	533	258	346	6.966	11.8665	52.62	243.42
4	26	16	336	126	264	3.402	8.1	41.09	256.59
4	26	17	154	21	146	0.567	4.05	28.97	266.53
4	26	18	45	0	45	0	1.215	16.72	275.14
4	26	19	2	0	2	0	0.054	4.63	283.44
4	26	20	0	0	0	0	0	--	--
4	26	21	0	0	0	0	0	--	--
4	26	22	0	0	0	0	0	--	--
4	26	23	0	0	0	0	0	--	--
4	26	24	0	0	0	0	0	--	--
4	27	1	0	0	0	0	0	--	--
4	27	2	0	0	0	0	0	--	--
4	27	3	0	0	0	0	0	--	--
4	27	4	0	0	0	0	0	--	--
4	27	5	0	0	0	0	0	--	--
4	27	6	23	0	23	0	0.621	-0.84	72.43
4	27	7	148	86	123	2.322	3.6585	11.1	80.83
4	27	8	224	36	206	0.972	5.805	23.32	89.15
4	27	9	337	18	325	0.486	8.937	35.56	98.25
4	27	10	429	52	387	1.404	11.016	47.47	109.52
4	27	11	490	53	443	1.431	12.5955	58.37	125.72
4	27	12	444	65	384	1.755	11.178	66.54	152.25
4	27	13	365	8	357	0.216	9.747	68.45	190.61
4	27	14	259	3	256	0.081	6.9525	62.74	223.61
4	27	15	216	1	215	0.027	5.8185	52.8	243.86
4	27	16	155	0	155	0	4.185	41.24	256.97
4	27	17	88	0	88	0	2.376	29.11	266.86

4	27	18	26	0	26	0	0.702	16.87	275.44
4	27	19	1	0	1	0	0.027	4.79	283.72
4	27	20	0	0	0	0	0	--	--
4	27	21	0	0	0	0	0	--	--
4	27	22	0	0	0	0	0	--	--
4	27	23	0	0	0	0	0	--	--
4	27	24	0	0	0	0	0	--	--
4	28	1	0	0	0	0	0	--	--
4	28	2	0	0	0	0	0	--	--
4	28	3	0	0	0	0	0	--	--
4	28	4	0	0	0	0	0	--	--
4	28	5	0	0	0	0	0	--	--
4	28	6	27	0	27	0	0.729	-0.62	72.2
4	28	7	197	284	112	7.668	4.1715	11.31	80.59
4	28	8	420	538	153	14.526	7.7355	23.52	88.88
4	28	9	629	721	147	19.467	10.476	35.76	97.95
4	28	10	798	804	152	21.708	12.825	47.69	109.18
4	28	11	908	834	163	22.518	14.4585	58.63	125.36
4	28	12	949	824	181	22.248	15.255	66.85	152.02
4	28	13	922	795	193	21.465	15.0525	68.76	190.85
4	28	14	829	751	192	20.277	13.7835	62.97	224.08
4	28	15	685	686	183	18.522	11.718	52.98	244.29
4	28	16	495	594	155	16.038	8.775	41.39	257.34
4	28	17	282	407	125	10.989	5.4945	29.25	267.19
4	28	18	88	95	70	2.565	2.133	17.01	275.73
4	28	19	4	0	4	0	0.108	4.94	284
4	28	20	0	0	0	0	0	--	--
4	28	21	0	0	0	0	0	--	--
4	28	22	0	0	0	0	0	--	--
4	28	23	0	0	0	0	0	--	--
4	28	24	0	0	0	0	0	--	--
4	29	1	0	0	0	0	0	--	--
4	29	2	0	0	0	0	0	--	--
4	29	3	0	0	0	0	0	--	--
4	29	4	0	0	0	0	0	--	--
4	29	5	0	0	0	0	0	--	--
4	29	6	30	0	30	0	0.81	-0.4	71.97
4	29	7	203	260	124	7.02	4.4145	11.51	80.34
4	29	8	431	550	157	14.85	7.938	23.72	88.62
4	29	9	646	643	215	17.361	11.6235	35.96	97.66
4	29	10	815	823	152	22.221	13.0545	47.91	108.84
4	29	11	934	869	156	23.463	14.715	58.88	124.99
4	29	12	982	919	123	24.813	14.9175	67.15	151.78
4	29	13	958	906	125	24.462	14.6205	69.06	191.08
4	29	14	863	834	154	22.518	13.7295	63.2	224.55
4	29	15	716	791	136	21.357	11.502	53.15	244.72
4	29	16	515	664	133	17.928	8.748	41.54	257.71
4	29	17	294	456	117	12.312	5.5485	29.39	267.51
4	29	18	90	120	68	3.24	2.133	17.15	276.03
4	29	19	4	0	4	0	0.108	5.09	284.28
4	29	20	0	0	0	0	0	--	--
4	29	21	0	0	0	0	0	--	--
4	29	22	0	0	0	0	0	--	--
4	29	23	0	0	0	0	0	--	--
4	29	24	0	0	0	0	0	--	--
4	30	1	0	0	0	0	0	--	--
4	30	2	0	0	0	0	0	--	--
4	30	3	0	0	0	0	0	--	--
4	30	4	0	0	0	0	0	--	--
4	30	5	0	0	0	0	0	--	--
4	30	6	31	0	31	0	0.837	-0.19	71.74
4	30	7	202	246	127	6.642	4.4415	11.71	80.09
4	30	8	425	539	154	14.553	7.8165	23.91	88.35
4	30	9	631	710	153	19.17	10.584	36.16	97.36
4	30	10	801	797	156	21.519	12.9195	48.12	108.5
4	30	11	913	835	163	22.545	14.526	59.12	124.62
4	30	12	935	724	257	19.548	16.092	67.44	151.54
4	30	13	866	535	374	14.445	16.74	69.36	191.31
4	30	14	715	418	358	11.286	14.4855	63.43	225.01
4	30	15	593	377	315	10.179	12.258	53.33	245.15
4	30	16	430	344	231	9.288	8.9235	41.69	258.07
4	30	17	245	200	167	5.4	5.562	29.53	267.83
4	30	18	84	80	69	2.16	2.0655	17.29	276.31
4	30	19	5	0	5	0	0.135	5.24	284.55
4	30	20	0	0	0	0	0	--	--
4	30	21	0	0	0	0	0	--	--
4	30	22	0	0	0	0	0	--	--
4	30	23	0	0	0	0	0	--	--
4	30	24	0	0	0	0	0	--	--
				143019	**72559**	**3861.513**	**3340.305**		

Appendix E: Data for May

Month	Day	Hour	Global Radiation (W/m²)	Direct Radiation (W/m²)	Diffuse Radiation (W/m²)	CPV (W)	PV (W)	Elevation (deg)	Azimuth (deg)
5	1	1	0	0	0	0	0	--	--
5	1	2	0	0	0	0	0	--	--
5	1	3	0	0	0	0	0	--	--
5	1	4	0	0	0	0	0	--	--
5	1	5	0	0	0	0	0	--	--
5	1	6	30	0	30	0	0.81	0.01	71.52
5	1	7	201	234	129	6.318	4.455	11.9	79.85
5	1	8	428	543	154	14.661	7.857	24.1	88.09
5	1	9	639	685	176	18.495	11.0025	36.35	97.06
5	1	10	809	789	169	21.303	13.203	48.32	108.16
5	1	11	922	857	151	23.139	14.4855	59.36	124.25
5	1	12	971	871	154	23.517	15.1875	67.73	151.29
5	1	13	951	869	149	23.463	14.85	69.66	191.54
5	1	14	863	848	140	22.896	13.5405	63.65	225.48
5	1	15	715	750	163	20.25	11.853	53.5	245.58
5	1	16	519	655	139	17.685	8.883	41.83	258.43
5	1	17	295	417	131	11.259	5.751	29.67	268.14
5	1	18	91	95	73	2.565	2.214	17.43	276.6
5	1	19	5	0	5	0	0.135	5.39	284.81
5	1	20	0	0	0	0	0	--	--
5	1	21	0	0	0	0	0	--	--
5	1	22	0	0	0	0	0	--	--
5	1	23	0	0	0	0	0	--	--
5	1	24	0	0	0	0	0	--	--
5	2	1	0	0	0	0	0	--	--
5	2	2	0	0	0	0	0	--	--
5	2	3	0	0	0	0	0	--	--
5	2	4	0	0	0	0	0	--	--
5	2	5	0	0	0	0	0	--	--
5	2	6	34	0	34	0	0.918	0.22	71.29
5	2	7	208	249	130	6.723	4.563	12.09	79.61
5	2	8	431	544	155	14.688	7.911	24.28	87.82
5	2	9	642	686	177	18.522	11.0565	36.54	96.77
5	2	10	809	783	173	21.141	13.257	48.52	107.82
5	2	11	915	830	167	22.41	14.607	59.59	123.87
5	2	12	967	854	164	23.058	15.2685	68.02	151.03
5	2	13	949	859	155	23.193	14.904	69.95	191.77
5	2	14	863	840	144	22.68	13.5945	63.88	225.94
5	2	15	715	763	151	20.601	11.691	53.67	246
5	2	16	518	666	131	17.982	8.7615	41.98	258.78
5	2	17	296	441	122	11.907	5.643	29.8	268.45
5	2	18	93	115	71	3.105	2.214	17.56	276.88
5	2	19	5	0	5	0	0.135	5.54	285.07
5	2	20	0	0	0	0	0	--	--
5	2	21	0	0	0	0	0	--	--
5	2	22	0	0	0	0	0	--	--
5	2	23	0	0	0	0	0	--	--
5	2	24	0	0	0	0	0	--	--
5	3	1	0	0	0	0	0	--	--
5	3	2	0	0	0	0	0	--	--
5	3	3	0	0	0	0	0	--	--
5	3	4	0	0	0	0	0	--	--
5	3	5	0	0	0	0	0	--	--
5	3	6	36	1	36	0.027	0.972	0.41	71.07
5	3	7	210	249	131	6.723	4.6035	12.28	79.37
5	3	8	431	532	160	14.364	7.9785	24.46	87.56
5	3	9	642	721	151	19.467	10.7055	36.72	96.47
5	3	10	812	813	150	21.951	12.987	48.72	107.48
5	3	11	927	834	173	22.518	14.85	59.82	123.49
5	3	12	977	884	145	23.868	15.147	68.3	150.76
5	3	13	958	887	137	23.949	14.7825	70.23	192
5	3	14	873	841	152	22.707	13.8375	64.09	226.4
5	3	15	712	728	173	19.656	11.9475	53.83	246.41
5	3	16	501	555	178	14.985	9.1665	42.12	259.13
5	3	17	287	392	132	10.584	5.6565	29.94	268.76
5	3	18	92	104	72	2.808	2.214	17.7	277.15
5	3	19	5	0	5	0	0.135	5.69	285.33
5	3	20	0	0	0	0	0	--	--
5	3	21	0	0	0	0	0	--	--
5	3	22	0	0	0	0	0	--	--
5	3	23	0	0	0	0	0	--	--
5	3	24	0	0	0	0	0	--	--
5	4	1	0	0	0	0	0	--	--
5	4	2	0	0	0	0	0	--	--

5	4	3	0	0	0	0	0	--	--
5	4	4	0	0	0	0	0	--	--
5	4	5	0	0	0	0	0	--	--
5	4	6	32	0	32	0	0.864	0.61	70.85
5	4	7	169	107	135	2.889	4.104	12.46	79.14
5	4	8	308	95	259	2.565	7.6545	24.63	87.3
5	4	9	457	213	311	5.751	10.368	36.89	96.18
5	4	10	576	155	449	4.185	13.8375	48.91	107.14
5	4	11	655	158	512	4.266	15.7545	60.04	123.11
5	4	12	811	527	314	14.229	15.1875	68.57	150.49
5	4	13	875	569	347	15.363	16.497	70.52	192.22
5	4	14	840	711	230	19.197	14.445	64.31	226.85
5	4	15	709	733	165	19.791	11.799	54	246.82
5	4	16	520	658	135	17.766	8.8425	42.26	259.48
5	4	17	299	440	124	11.88	5.7105	30.07	269.06
5	4	18	96	119	73	3.213	2.2815	17.84	277.42
5	4	19	6	0	6	0	0.162	5.83	285.58
5	4	20	0	0	0	0	0	--	--
5	4	21	0	0	0	0	0	--	--
5	4	22	0	0	0	0	0	--	--
5	4	23	0	0	0	0	0	--	--
5	4	24	0	0	0	0	0	--	--
5	5	1	0	0	0	0	0	--	--
5	5	2	0	0	0	0	0	--	--
5	5	3	0	0	0	0	0	--	--
5	5	4	0	0	0	0	0	--	--
5	5	5	0	0	0	0	0	--	--
5	5	6	39	8	38	0.216	1.0395	0.8	70.63
5	5	7	214	250	134	6.75	4.698	12.63	78.9
5	5	8	434	521	165	14.067	8.0865	24.8	87.05
5	5	9	633	668	176	18.036	10.9215	37.06	95.89
5	5	10	781	687	218	18.549	13.4865	49.09	106.8
5	5	11	856	622	291	16.794	15.4845	60.26	122.73
5	5	12	847	417	453	11.259	17.55	68.84	150.21
5	5	13	761	318	465	8.586	16.551	70.79	192.44
5	5	14	613	261	388	7.047	13.5135	64.52	227.3
5	5	15	470	126	377	3.402	11.4345	54.16	247.22
5	5	16	312	75	268	2.025	7.83	42.4	259.82
5	5	17	160	18	153	0.486	4.2255	30.2	269.35
5	5	18	73	8	72	0.216	1.9575	17.97	277.69
5	5	19	5	0	5	0	0.135	5.98	285.83
5	5	20	0	0	0	0	0	--	--
5	5	21	0	0	0	0	0	--	--
5	5	22	0	0	0	0	0	--	--
5	5	23	0	0	0	0	0	--	--
5	5	24	0	0	0	0	0	--	--
5	6	1	0	0	0	0	0	--	--
5	6	2	0	0	0	0	0	--	--
5	6	3	0	0	0	0	0	--	--
5	6	4	0	0	0	0	0	--	--
5	6	5	0	0	0	0	0	--	--
5	6	6	22	0	22	0	0.594	0.98	70.41
5	6	7	116	6	114	0.162	3.105	12.8	78.67
5	6	8	235	10	230	0.27	6.2775	24.97	86.79
5	6	9	300	9	293	0.243	8.0055	37.23	95.6
5	6	10	314	3	312	0.081	8.451	49.27	106.47
5	6	11	279	3	276	0.081	7.4925	60.47	122.35
5	6	12	293	6	288	0.162	7.8435	69.11	149.92
5	6	13	287	5	282	0.135	7.6815	71.07	192.65
5	6	14	261	5	257	0.135	6.993	64.73	227.75
5	6	15	217	3	215	0.081	5.832	54.32	247.62
5	6	16	158	0	158	0	4.266	42.54	260.15
5	6	17	91	0	91	0	2.457	30.33	269.64
5	6	18	30	0	30	0	0.81	18.11	277.95
5	6	19	2	0	2	0	0.054	6.13	286.07
5	6	20	0	0	0	0	0	--	--
5	6	21	0	0	0	0	0	--	--
5	6	22	0	0	0	0	0	--	--
5	6	23	0	0	0	0	0	--	--
5	6	24	0	0	0	0	0	--	--
5	7	1	0	0	0	0	0	--	--
5	7	2	0	0	0	0	0	--	--
5	7	3	0	0	0	0	0	--	--
5	7	4	0	0	0	0	0	--	--
5	7	5	0	0	0	0	0	--	--
5	7	6	28	0	28	0	0.756	1.16	70.2
5	7	7	166	107	131	2.889	4.0095	12.97	78.44
5	7	8	367	279	222	7.533	7.9515	25.13	86.54
5	7	9	517	305	307	8.235	11.124	37.39	95.31
5	7	10	616	238	421	6.426	13.9995	49.44	106.13
5	7	11	657	147	524	3.969	15.9435	60.67	121.96

5	7	12	639	172	476	4.644	15.0525	69.36	149.63
5	7	13	570	118	460	3.186	13.905	71.34	192.87
5	7	14	463	68	404	1.836	11.7045	64.93	228.19
5	7	15	384	34	359	0.918	10.0305	54.47	248.02
5	7	16	280	23	267	0.621	7.3845	42.67	260.48
5	7	17	162	14	157	0.378	4.3065	30.46	269.92
5	7	18	54	0	54	0	1.458	18.24	278.2
5	7	19	4	0	4	0	0.108	6.27	286.31
5	7	20	0	0	0	0	0	--	--
5	7	21	0	0	0	0	0	--	--
5	7	22	0	0	0	0	0	--	--
5	7	23	0	0	0	0	0	--	--
5	7	24	0	0	0	0	0	--	--
5	8	1	0	0	0	0	0	--	--
5	8	2	0	0	0	0	0	--	--
5	8	3	0	0	0	0	0	--	--
5	8	4	0	0	0	0	0	--	--
5	8	5	0	0	0	0	0	--	--
5	8	6	37	0	37	0	0.999	1.34	69.99
5	8	7	204	236	126	6.372	4.455	13.13	78.21
5	8	8	432	487	177	13.149	8.2215	25.29	86.29
5	8	9	650	668	188	18.036	11.313	37.55	95.03
5	8	10	824	789	173	21.303	13.4595	49.61	105.8
5	8	11	936	872	140	23.544	14.526	60.87	121.57
5	8	12	982	868	157	23.436	15.3765	69.62	149.32
5	8	13	959	860	156	23.22	15.0525	71.6	193.08
5	8	14	870	832	150	22.464	13.77	65.13	228.63
5	8	15	723	759	155	20.493	11.853	54.63	248.41
5	8	16	529	665	134	17.955	8.9505	42.81	260.81
5	8	17	307	445	126	12.015	5.8455	30.59	270.2
5	8	18	103	128	76	3.456	2.4165	18.38	278.45
5	8	19	7	0	7	0	0.189	6.41	286.54
5	8	20	0	0	0	0	0	--	--
5	8	21	0	0	0	0	0	--	--
5	8	22	0	0	0	0	0	--	--
5	8	23	0	0	0	0	0	--	--
5	8	24	0	0	0	0	0	--	--
5	9	1	0	0	0	0	0	--	--
5	9	2	0	0	0	0	0	--	--
5	9	3	0	0	0	0	0	--	--
5	9	4	0	0	0	0	0	--	--
5	9	5	0	0	0	0	0	--	--
5	9	6	30	0	30	0	0.81	1.51	69.78
5	9	7	133	12	129	0.324	3.537	13.29	77.99
5	9	8	235	24	223	0.648	6.183	25.44	86.04
5	9	9	345	35	321	0.945	8.991	37.7	94.75
5	9	10	434	47	394	1.269	11.178	49.77	105.47
5	9	11	493	86	414	2.322	12.2445	61.06	121.19
5	9	12	580	136	451	3.672	13.9185	69.86	149.02
5	9	13	623	197	439	5.319	14.337	71.86	193.28
5	9	14	612	286	364	7.722	13.176	65.33	229.07
5	9	15	490	153	376	4.131	11.691	54.78	248.79
5	9	16	345	107	281	2.889	8.451	42.94	261.12
5	9	17	192	58	168	1.566	4.86	30.72	270.47
5	9	18	62	0	62	0	1.674	18.51	278.7
5	9	19	4	0	4	0	0.108	6.56	286.77
5	9	20	0	0	0	0	0	--	--
5	9	21	0	0	0	0	0	--	--
5	9	22	0	0	0	0	0	--	--
5	9	23	0	0	0	0	0	--	--
5	9	24	0	0	0	0	0	--	--
5	10	1	0	0	0	0	0	--	--
5	10	2	0	0	0	0	0	--	--
5	10	3	0	0	0	0	0	--	--
5	10	4	0	0	0	0	0	--	--
5	10	5	0	0	0	0	0	--	--
5	10	6	28	0	28	0	0.756	1.67	69.57
5	10	7	104	0	104	0	2.808	13.44	77.77
5	10	8	134	0	134	0	3.618	25.58	85.8
5	10	9	251	9	245	0.243	6.696	37.84	94.47
5	10	10	378	5	374	0.135	10.152	49.93	105.14
5	10	11	495	73	428	1.971	12.4605	61.25	120.8
5	10	12	519	87	436	2.349	12.8925	70.1	148.7
5	10	13	508	87	427	2.349	12.6225	72.12	193.48
5	10	14	462	71	400	1.917	11.637	65.52	229.5
5	10	15	385	33	360	0.891	10.0575	54.93	249.16
5	10	16	282	23	268	0.621	7.425	43.07	261.43
5	10	17	165	14	159	0.378	4.374	30.85	270.74
5	10	18	49	0	49	0	1.323	18.64	278.94
5	10	19	3	0	3	0	0.081	6.7	286.99
5	10	20	0	0	0	0	0	--	--

5	10	21	0	0	0	0	0	--	--
5	10	22	0	0	0	0	0	--	--
5	10	23	0	0	0	0	0	--	--
5	10	24	0	0	0	0	0	--	--
5	11	1	0	0	0	0	0	--	--
5	11	2	0	0	0	0	0	--	--
5	11	3	0	0	0	0	0	--	--
5	11	4	0	0	0	0	0	--	--
5	11	5	1	0	1	0	0	--	--
5	11	6	49	25	45	0.675	1.269	1.83	69.37
5	11	7	228	300	127	8.1	4.7925	13.59	77.55
5	11	8	451	541	164	14.607	8.3025	25.72	85.56
5	11	9	658	718	157	19.386	11.0025	37.98	94.19
5	11	10	824	802	159	21.654	13.2705	50.08	104.81
5	11	11	934	847	157	22.869	14.7285	61.43	120.41
5	11	12	980	852	168	23.004	15.498	70.34	148.38
5	11	13	960	849	163	22.923	15.1605	72.37	193.67
5	11	14	873	827	153	22.329	13.851	65.71	229.92
5	11	15	722	738	166	19.926	11.988	55.08	249.53
5	11	16	523	614	156	16.578	9.1665	43.2	261.74
5	11	17	300	352	155	9.504	6.1425	30.97	271
5	11	18	100	98	80	2.646	2.43	18.77	279.17
5	11	19	7	0	7	0	0.189	6.84	287.21
5	11	20	0	0	0	0	0	--	--
5	11	21	0	0	0	0	0	--	--
5	11	22	0	0	0	0	0	--	--
5	11	23	0	0	0	0	0	--	--
5	11	24	0	0	0	0	0	--	--
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5	12	2	0	0	0	0	0	--	--
5	12	3	0	0	0	0	0	--	--
5	12	4	0	0	0	0	0	--	--
5	12	5	1	0	1	0	0	--	--
5	12	6	50	28	47	0.756	1.3095	1.99	69.16
5	12	7	230	300	128	8.1	4.833	13.73	77.33
5	12	8	451	536	166	14.472	8.3295	25.86	85.32
5	12	9	657	710	161	19.17	11.043	38.12	93.92
5	12	10	822	790	165	21.33	13.3245	50.23	104.48
5	12	11	932	835	164	22.545	14.796	61.6	120.02
5	12	12	979	842	174	22.734	15.5655	70.57	148.05
5	12	13	959	842	168	22.734	15.2145	72.62	193.86
5	12	14	872	821	157	22.167	13.8915	65.9	230.34
5	12	15	701	647	212	17.469	12.3255	55.22	249.89
5	12	16	443	308	258	8.316	9.4635	43.33	262.04
5	12	17	167	20	159	0.54	4.401	31.1	271.26
5	12	18	94	67	80	1.809	2.349	18.9	279.4
5	12	19	8	0	8	0	0.216	6.98	287.42
5	12	20	0	0	0	0	0	--	--
5	12	21	0	0	0	0	0	--	--
5	12	22	0	0	0	0	0	--	--
5	12	23	0	0	0	0	0	--	--
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5	13	2	0	0	0	0	0	--	--
5	13	3	0	0	0	0	0	--	--
5	13	4	0	0	0	0	0	--	--
5	13	5	1	0	1	0	0	--	--
5	13	6	52	29	48	0.783	1.35	2.14	68.97
5	13	7	231	297	129	8.019	4.86	13.87	77.12
5	13	8	452	532	168	14.364	8.37	25.99	85.08
5	13	9	658	706	163	19.062	11.0835	38.25	93.65
5	13	10	823	789	166	21.303	13.3515	50.37	104.16
5	13	11	933	836	164	22.572	14.8095	61.77	119.63
5	13	12	964	792	206	21.384	15.795	70.79	147.71
5	13	13	895	558	370	15.066	17.0775	72.86	194.05
5	13	14	724	403	373	10.881	14.8095	66.08	230.75
5	13	15	590	347	328	9.369	12.393	55.37	250.25
5	13	16	424	265	264	7.155	9.288	43.46	262.33
5	13	17	244	148	182	3.996	5.751	31.22	271.51
5	13	18	83	12	81	0.324	2.214	19.03	279.62
5	13	19	6	0	6	0	0.162	7.12	287.62
5	13	20	0	0	0	0	0	--	--
5	13	21	0	0	0	0	0	--	--
5	13	22	0	0	0	0	0	--	--
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5	14	2	0	0	0	0	0	--	--
5	14	3	0	0	0	0	0	--	--
5	14	4	0	0	0	0	0	--	--
5	14	5	1	0	1	0	0	--	--

5	14	6	49	24	45	0.648	1.269	2.29	68.77
5	14	7	225	239	143	6.453	4.968	14.01	76.91
5	14	8	449	512	175	13.824	8.424	26.11	84.85
5	14	9	648	685	166	18.495	10.989	38.37	93.38
5	14	10	803	784	149	21.168	12.852	50.5	103.84
5	14	11	900	778	183	21.006	14.6205	61.93	119.25
5	14	12	956	761	227	20.547	15.9705	71	147.37
5	14	13	944	789	201	21.303	15.4575	73.1	194.22
5	14	14	866	792	174	21.384	14.04	66.26	231.15
5	14	15	711	683	193	18.441	12.204	55.51	250.6
5	14	16	509	520	196	14.04	9.5175	43.58	262.62
5	14	17	289	294	166	7.938	6.1425	31.35	271.76
5	14	18	108	126	81	3.402	2.5515	19.16	279.84
5	14	19	9	0	9	0	0.243	7.26	287.82
5	14	20	0	0	0	0	0	--	--
5	14	21	0	0	0	0	0	--	--
5	14	22	0	0	0	0	0	--	--
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5	15	1	0	0	0	0	0	--	--
5	15	2	0	0	0	0	0	--	--
5	15	3	0	0	0	0	0	--	--
5	15	4	0	0	0	0	0	--	--
5	15	5	1	0	1	0	0	--	--
5	15	6	55	34	50	0.918	1.4175	2.43	68.58
5	15	7	234	267	141	7.209	5.0625	14.13	76.7
5	15	8	450	513	175	13.851	8.4375	26.24	84.62
5	15	9	657	691	170	18.657	11.1645	38.49	93.12
5	15	10	823	779	172	21.033	13.4325	50.63	103.52
5	15	11	934	898	106	24.246	14.04	62.09	118.86
5	15	12	957	721	265	19.467	16.497	71.21	147.02
5	15	13	855	495	388	13.365	16.7805	73.33	194.39
5	15	14	617	251	397	6.777	13.689	66.44	231.55
5	15	15	629	416	313	11.232	12.717	55.65	250.94
5	15	16	511	519	197	14.013	9.558	43.71	262.9
5	15	17	315	464	120	12.528	5.8725	31.47	271.99
5	15	18	114	148	81	3.996	2.6325	19.28	280.05
5	15	19	9	0	9	0	0.243	7.39	288.02
5	15	20	0	0	0	0	0	--	--
5	15	21	0	0	0	0	0	--	--
5	15	22	0	0	0	0	0	--	--
5	15	23	0	0	0	0	0	--	--
5	15	24	0	0	0	0	0	--	--
5	16	1	0	0	0	0	0	--	--
5	16	2	0	0	0	0	0	--	--
5	16	3	0	0	0	0	0	--	--
5	16	4	0	0	0	0	0	--	--
5	16	5	1	0	1	0	0	--	--
5	16	6	55	30	50	0.81	1.4175	2.56	68.39
5	16	7	233	258	143	6.966	5.076	14.26	76.49
5	16	8	452	562	148	15.174	8.1	26.35	84.39
5	16	9	658	710	157	19.17	11.0025	38.61	92.86
5	16	10	825	779	172	21.033	13.4595	50.75	103.21
5	16	11	936	834	166	22.518	14.877	62.24	118.48
5	16	12	982	903	114	24.381	14.796	71.42	146.66
5	16	13	960	898	112	24.246	14.472	73.56	194.56
5	16	14	874	866	115	23.382	13.3515	66.61	231.93
5	16	15	729	794	125	21.438	11.529	55.78	251.27
5	16	16	538	700	113	18.9	8.7885	43.83	263.17
5	16	17	320	477	118	12.879	5.913	31.59	272.23
5	16	18	116	151	82	4.077	2.673	19.41	280.26
5	16	19	10	0	10	0	0.27	7.53	288.21
5	16	20	0	0	0	0	0	--	--
5	16	21	0	0	0	0	0	--	--
5	16	22	0	0	0	0	0	--	--
5	16	23	0	0	0	0	0	--	--
5	16	24	0	0	0	0	0	--	--
5	17	1	0	0	0	0	0	--	--
5	17	2	0	0	0	0	0	--	--
5	17	3	0	0	0	0	0	--	--
5	17	4	0	0	0	0	0	--	--
5	17	5	1	0	1	0	0	--	--
5	17	6	57	36	51	0.972	1.458	2.7	68.2
5	17	7	236	298	132	8.046	4.968	14.38	76.29
5	17	8	453	562	149	15.174	8.127	26.46	84.17
5	17	9	659	708	158	19.116	11.0295	38.72	92.6
5	17	10	825	817	140	22.059	13.0275	50.87	102.9
5	17	11	936	894	108	24.138	14.094	62.38	118.1
5	17	12	966	848	151	22.896	15.0795	71.61	146.3
5	17	13	899	555	374	14.985	17.1855	73.78	194.71
5	17	14	728	403	375	10.881	14.8905	66.78	232.32

5	17	15	550	256	355	6.912	12.2175	55.92	251.6
5	17	16	352	129	274	3.483	8.451	43.95	263.44
5	17	17	171	35	156	0.945	4.4145	31.71	272.45
5	17	18	70	0	70	0	1.89	19.53	280.46
5	17	19	7	0	7	0	0.189	7.66	288.39
5	17	20	0	0	0	0	0	--	--
5	17	21	0	0	0	0	0	--	--
5	17	22	0	0	0	0	0	--	--
5	17	23	0	0	0	0	0	--	--
5	17	24	0	0	0	0	0	--	--
5	18	1	0	0	0	0	0	--	--
5	18	2	0	0	0	0	0	--	--
5	18	3	0	0	0	0	0	--	--
5	18	4	0	0	0	0	0	--	--
5	18	5	1	0	1	0	0	--	--
5	18	6	38	0	38	0	1.026	2.82	68.01
5	18	7	142	40	128	1.08	3.645	14.49	76.09
5	18	8	243	24	230	0.648	6.3855	26.57	83.95
5	18	9	525	287	322	7.749	11.4345	38.82	92.35
5	18	10	770	552	306	14.904	14.526	50.98	102.6
5	18	11	924	777	204	20.979	15.228	62.52	117.72
5	18	12	955	803	182	21.681	15.3495	71.8	145.94
5	18	13	911	677	271	18.279	15.957	74	194.86
5	18	14	798	588	281	15.876	14.5665	66.95	232.69
5	18	15	704	692	175	18.684	11.8665	56.05	251.91
5	18	16	534	669	126	18.063	8.91	44.07	263.69
5	18	17	323	476	119	12.852	5.967	31.82	272.67
5	18	18	119	154	83	4.158	2.727	19.65	280.66
5	18	19	10	0	10	0	0.27	7.8	288.57
5	18	20	0	0	0	0	0	--	--
5	18	21	0	0	0	0	0	--	--
5	18	22	0	0	0	0	0	--	--
5	18	23	0	0	0	0	0	--	--
5	18	24	0	0	0	0	0	--	--
5	19	1	0	0	0	0	0	--	--
5	19	2	0	0	0	0	0	--	--
5	19	3	0	0	0	0	0	--	--
5	19	4	0	0	0	0	0	--	--
5	19	5	2	0	2	0	0.054	--	--
5	19	6	60	42	53	1.134	1.5255	2.94	67.83
5	19	7	242	310	132	8.37	5.049	14.6	75.9
5	19	8	461	585	143	15.795	8.154	26.67	83.73
5	19	9	665	722	153	19.494	11.043	38.92	92.1
5	19	10	829	823	137	22.221	13.041	51.09	102.3
5	19	11	937	891	111	24.057	14.148	62.65	117.34
5	19	12	982	894	120	24.138	14.877	71.99	145.57
5	19	13	960	820	182	22.14	15.417	74.21	195
5	19	14	872	791	176	21.357	14.148	67.11	233.05
5	19	15	731	736	167	19.872	12.123	56.18	252.22
5	19	16	541	696	116	18.792	8.8695	44.19	263.95
5	19	17	324	476	120	12.852	5.994	31.94	272.89
5	19	18	120	156	84	4.212	2.754	19.77	280.85
5	19	19	11	0	11	0	0.297	7.93	288.74
5	19	20	0	0	0	0	0	--	--
5	19	21	0	0	0	0	0	--	--
5	19	22	0	0	0	0	0	--	--
5	19	23	0	0	0	0	0	--	--
5	19	24	0	0	0	0	0	--	--
5	20	1	0	0	0	0	0	--	--
5	20	2	0	0	0	0	0	--	--
5	20	3	0	0	0	0	0	--	--
5	20	4	0	0	0	0	0	--	--
5	20	5	2	0	2	0	0.054	--	--
5	20	6	61	43	54	1.161	1.5525	3.06	67.65
5	20	7	241	303	133	8.181	5.049	14.7	75.71
5	20	8	456	557	152	15.039	8.208	26.76	83.52
5	20	9	640	676	160	18.252	10.8	39.02	91.86
5	20	10	757	594	257	16.038	13.689	51.19	102
5	20	11	778	478	335	12.906	15.0255	62.77	116.97
5	20	12	782	368	428	9.936	16.335	72.17	145.2
5	20	13	728	297	447	8.019	15.8625	74.42	195.13
5	20	14	624	207	441	5.589	14.3775	67.27	233.41
5	20	15	556	259	357	6.993	12.3255	56.31	252.52
5	20	16	433	271	267	7.317	9.45	44.3	264.19
5	20	17	272	127	217	3.429	6.6015	32.05	273.09
5	20	18	101	67	86	1.809	2.5245	19.89	281.03
5	20	19	9	0	9	0	0.243	8.06	288.91
5	20	20	0	0	0	0	0	--	--
5	20	21	0	0	0	0	0	--	--
5	20	22	0	0	0	0	0	--	--
5	20	23	0	0	0	0	0	--	--

5	20	24	0	0	0	0	0	--	--
5	21	1	0	0	0	0	0	--	--
5	21	2	0	0	0	0	0	--	--
5	21	3	0	0	0	0	0	--	--
5	21	4	0	0	0	0	0	--	--
5	21	5	2	0	2	0	0.054	--	--
5	21	6	62	46	55	1.242	1.5795	3.17	67.48
5	21	7	245	278	145	7.506	5.265	14.8	75.52
5	21	8	464	537	171	14.499	8.5725	26.86	83.31
5	21	9	669	707	165	19.089	11.259	39.1	91.62
5	21	10	834	791	167	21.357	13.5135	51.28	101.71
5	21	11	943	838	164	22.626	14.9445	62.89	116.6
5	21	12	963	723	265	19.521	16.578	72.34	144.82
5	21	13	860	492	392	13.284	16.902	74.62	195.25
5	21	14	621	241	408	6.507	13.8915	67.43	233.75
5	21	15	611	384	316	10.368	12.5145	56.43	252.82
5	21	16	498	498	192	13.446	9.315	44.42	264.43
5	21	17	316	442	125	11.934	5.9535	32.17	273.29
5	21	18	121	151	86	4.077	2.7945	20.01	281.21
5	21	19	11	0	11	0	0.297	8.18	289.07
5	21	20	0	0	0	0	0	--	--
5	21	21	0	0	0	0	0	--	--
5	21	22	0	0	0	0	0	--	--
5	21	23	0	0	0	0	0	--	--
5	21	24	0	0	0	0	0	--	--
5	22	1	0	0	0	0	0	--	--
5	22	2	0	0	0	0	0	--	--
5	22	3	0	0	0	0	0	--	--
5	22	4	0	0	0	0	0	--	--
5	22	5	2	0	2	0	0.054	--	--
5	22	6	62	42	55	1.134	1.5795	3.28	67.31
5	22	7	229	249	140	6.723	4.9815	14.9	75.33
5	22	8	384	312	213	8.424	8.0595	26.94	83.11
5	22	9	530	322	300	8.694	11.205	39.19	91.38
5	22	10	624	291	378	7.857	13.527	51.37	101.42
5	22	11	662	139	532	3.753	16.119	63	116.23
5	22	12	645	165	485	4.455	15.255	72.5	144.44
5	22	13	577	115	468	3.105	14.1075	74.82	195.36
5	22	14	472	67	413	1.809	11.9475	67.58	234.09
5	22	15	441	100	364	2.7	10.8675	56.56	253.1
5	22	16	358	114	288	3.078	8.721	44.53	264.66
5	22	17	233	73	201	1.971	5.859	32.28	273.49
5	22	18	82	6	80	0.162	2.187	20.13	281.38
5	22	19	7	0	7	0	0.189	8.31	289.22
5	22	20	0	0	0	0	0	--	--
5	22	21	0	0	0	0	0	--	--
5	22	22	0	0	0	0	0	--	--
5	22	23	0	0	0	0	0	--	--
5	22	24	0	0	0	0	0	--	--
5	23	1	0	0	0	0	0	--	--
5	23	2	0	0	0	0	0	--	--
5	23	3	0	0	0	0	0	--	--
5	23	4	0	0	0	0	0	--	--
5	23	5	2	0	2	0	0.054	--	--
5	23	6	61	34	55	0.918	1.566	3.38	67.14
5	23	7	212	194	142	5.238	4.779	14.99	75.15
5	23	8	328	141	251	3.807	7.8165	27.02	82.91
5	23	9	436	79	380	2.133	11.016	39.27	91.15
5	23	10	494	85	423	2.295	12.3795	51.46	101.14
5	23	11	499	84	421	2.268	12.42	63.1	115.87
5	23	12	742	260	491	7.02	16.6455	72.66	144.06
5	23	13	862	492	394	13.284	16.956	75.01	195.46
5	23	14	855	666	266	17.982	15.1335	67.73	234.41
5	23	15	736	761	150	20.547	11.961	56.68	253.37
5	23	16	552	665	141	17.955	9.3555	44.64	264.88
5	23	17	335	461	133	12.447	6.318	32.39	273.67
5	23	18	128	160	90	4.32	2.943	20.25	281.54
5	23	19	12	0	12	0	0.324	8.43	289.37
5	23	20	0	0	0	0	0	--	--
5	23	21	0	0	0	0	0	--	--
5	23	22	0	0	0	0	0	--	--
5	23	23	0	0	0	0	0	--	--
5	23	24	0	0	0	0	0	--	--
5	24	1	0	0	0	0	0	--	--
5	24	2	0	0	0	0	0	--	--
5	24	3	0	0	0	0	0	--	--
5	24	4	0	0	0	0	0	--	--
5	24	5	2	0	2	0	0.054	--	--
5	24	6	60	31	56	0.837	1.566	3.47	66.98
5	24	7	220	218	141	5.886	4.8735	15.07	74.98
5	24	8	386	336	201	9.072	7.9245	27.1	82.72

5	24	9	594	471	257	12.717	11.4885	39.34	90.93
5	24	10	776	590	277	15.93	14.2155	51.54	100.86
5	24	11	905	720	234	19.44	15.3765	63.2	115.51
5	24	12	983	835	175	22.545	15.633	72.81	143.67
5	24	13	944	770	211	20.79	15.5925	75.2	195.56
5	24	14	804	566	303	15.282	14.9445	67.88	234.72
5	24	15	711	689	179	18.603	12.015	56.8	253.64
5	24	16	543	670	129	18.09	9.072	44.75	265.09
5	24	17	333	481	122	12.987	6.1425	32.5	273.86
5	24	18	128	166	88	4.482	2.916	20.36	281.7
5	24	19	13	0	13	0	0.351	8.56	289.52
5	24	20	0	0	0	0	0	--	--
5	24	21	0	0	0	0	0	--	--
5	24	22	0	0	0	0	0	--	--
5	24	23	0	0	0	0	0	--	--
5	24	24	0	0	0	0	0	--	--
5	25	1	0	0	0	0	0	--	--
5	25	2	0	0	0	0	0	--	--
5	25	3	0	0	0	0	0	--	--
5	25	4	0	0	0	0	0	--	--
5	25	5	3	0	3	0	0.081	--	--
5	25	6	66	53	57	1.431	1.6605	3.56	66.81
5	25	7	248	312	135	8.424	5.1705	15.15	74.81
5	25	8	465	578	147	15.606	8.262	27.17	82.53
5	25	9	669	714	157	19.278	11.151	39.41	90.71
5	25	10	832	818	140	22.086	13.122	51.61	100.59
5	25	11	941	891	111	24.057	14.202	63.3	115.16
5	25	12	985	887	125	23.949	14.985	72.95	143.28
5	25	13	961	872	130	23.544	14.7285	75.38	195.64
5	25	14	873	826	140	22.302	13.6755	68.02	235.03
5	25	15	731	756	147	20.412	11.853	56.92	253.89
5	25	16	544	674	126	18.198	9.045	44.86	265.3
5	25	17	331	465	126	12.555	6.1695	32.61	274.03
5	25	18	129	164	89	4.428	2.943	20.47	281.85
5	25	19	13	0	13	0	0.351	8.68	289.65
5	25	20	0	0	0	0	0	--	--
5	25	21	0	0	0	0	0	--	--
5	25	22	0	0	0	0	0	--	--
5	25	23	0	0	0	0	0	--	--
5	25	24	0	0	0	0	0	--	--
5	26	1	0	0	0	0	0	--	--
5	26	2	0	0	0	0	0	--	--
5	26	3	0	0	0	0	0	--	--
5	26	4	0	0	0	0	0	--	--
5	26	5	3	0	3	0	0.081	--	--
5	26	6	67	52	58	1.404	1.6875	3.65	66.66
5	26	7	249	313	136	8.451	5.1975	15.22	74.64
5	26	8	466	579	147	15.633	8.2755	27.24	82.34
5	26	9	668	710	159	19.17	11.1645	39.47	90.49
5	26	10	830	808	146	21.816	13.176	51.68	100.33
5	26	11	938	876	120	23.652	14.283	63.38	114.82
5	26	12	985	885	126	23.895	14.9985	73.09	142.9
5	26	13	966	887	120	23.949	14.661	75.56	195.71
5	26	14	883	861	119	23.247	13.527	68.16	235.32
5	26	15	733	758	146	20.466	11.8665	57.03	254.14
5	26	16	531	597	160	16.119	9.3285	44.97	265.5
5	26	17	306	325	163	8.775	6.3315	32.71	274.2
5	26	18	109	75	90	2.025	2.6865	20.58	282
5	26	19	9	0	9	0	0.243	8.8	289.78
5	26	20	0	0	0	0	0	--	--
5	26	21	0	0	0	0	0	--	--
5	26	22	0	0	0	0	0	--	--
5	26	23	0	0	0	0	0	--	--
5	26	24	0	0	0	0	0	--	--
5	27	1	0	0	0	0	0	--	--
5	27	2	0	0	0	0	0	--	--
5	27	3	0	0	0	0	0	--	--
5	27	4	0	0	0	0	0	--	--
5	27	5	2	0	2	0	0.054	--	--
5	27	6	44	0	44	0	1.188	3.73	66.5
5	27	7	149	42	133	1.134	3.807	15.29	74.47
5	27	8	248	24	235	0.648	6.5205	27.3	82.16
5	27	9	472	189	336	5.103	10.908	39.53	90.28
5	27	10	689	403	348	10.881	13.9995	51.74	100.07
5	27	11	857	585	311	15.795	15.768	63.47	114.48
5	27	12	876	563	330	15.201	16.281	73.22	142.51
5	27	13	833	534	323	14.418	15.606	75.73	195.77
5	27	14	733	444	338	11.988	14.4585	68.3	235.6
5	27	15	588	329	333	8.883	12.4335	57.14	254.37
5	27	16	415	185	300	4.995	9.6525	45.07	265.69
5	27	17	238	116	186	3.132	5.724	32.82	274.36

5	27	18	118	43	107	1.161	3.0375	20.69	282.14
5	27	19	13	0	13	0	0.351	8.91	289.91
5	27	20	0	0	0	0	0	--	--
5	27	21	0	0	0	0	0	--	--
5	27	22	0	0	0	0	0	--	--
5	27	23	0	0	0	0	0	--	--
5	27	24	0	0	0	0	0	--	--
5	28	1	0	0	0	0	0	--	--
5	28	2	0	0	0	0	0	--	--
5	28	3	0	0	0	0	0	--	--
5	28	4	0	0	0	0	0	--	--
5	28	5	3	0	3	0	0.081	--	--
5	28	6	68	56	59	1.512	1.7145	3.81	66.35
5	28	7	251	313	137	8.451	5.238	15.36	74.31
5	28	8	468	582	146	15.714	8.289	27.36	81.98
5	28	9	665	737	135	19.899	10.8	39.59	90.08
5	28	10	804	740	176	19.98	13.23	51.8	99.82
5	28	11	861	629	273	16.983	15.309	63.54	114.15
5	28	12	939	680	279	18.36	16.443	73.34	142.12
5	28	13	945	760	218	20.52	15.7005	75.89	195.81
5	28	14	876	829	139	22.383	13.7025	68.43	235.87
5	28	15	736	761	145	20.547	11.8935	57.25	254.6
5	28	16	550	681	124	18.387	9.099	45.17	265.87
5	28	17	337	474	126	12.798	6.2505	32.92	274.51
5	28	18	134	172	91	4.644	3.0375	20.8	282.27
5	28	19	14	0	14	0	0.378	9.03	290.03
5	28	20	0	0	0	0	0	--	--
5	28	21	0	0	0	0	0	--	--
5	28	22	0	0	0	0	0	--	--
5	28	23	0	0	0	0	0	--	--
5	28	24	0	0	0	0	0	--	--
5	29	1	0	0	0	0	0	--	--
5	29	2	0	0	0	0	0	--	--
5	29	3	0	0	0	0	0	--	--
5	29	4	0	0	0	0	0	--	--
5	29	5	3	0	3	0	0.081	--	--
5	29	6	68	51	60	1.377	1.728	3.88	66.21
5	29	7	249	304	138	8.208	5.2245	15.42	74.16
5	29	8	465	562	153	15.174	8.343	27.41	81.81
5	29	9	665	691	168	18.657	11.2455	39.63	89.88
5	29	10	826	787	158	21.249	13.284	51.85	99.57
5	29	11	933	854	134	23.058	14.4045	63.61	113.83
5	29	12	973	838	159	22.626	15.282	73.45	141.73
5	29	13	945	806	174	21.762	15.1065	76.05	195.85
5	29	14	855	718	215	19.386	14.445	68.56	236.12
5	29	15	718	693	179	18.711	12.1095	57.36	254.82
5	29	16	537	621	148	16.767	9.2475	45.28	266.04
5	29	17	330	435	135	11.745	6.2775	33.02	274.65
5	29	18	131	144	95	3.888	3.051	20.91	282.4
5	29	19	14	0	14	0	0.378	9.14	290.14
5	29	20	0	0	0	0	0	--	--
5	29	21	0	0	0	0	0	--	--
5	29	22	0	0	0	0	0	--	--
5	29	23	0	0	0	0	0	--	--
5	29	24	0	0	0	0	0	--	--
5	30	1	0	0	0	0	0	--	--
5	30	2	0	0	0	0	0	--	--
5	30	3	0	0	0	0	0	--	--
5	30	4	0	0	0	0	0	--	--
5	30	5	3	0	3	0	0.081	--	--
5	30	6	69	55	60	1.485	1.7415	3.94	66.07
5	30	7	253	279	150	7.533	5.4405	15.47	74.01
5	30	8	470	530	176	14.31	8.721	27.46	81.65
5	30	9	673	696	172	18.792	11.4075	39.68	89.68
5	30	10	836	778	175	21.006	13.6485	51.9	99.33
5	30	11	945	827	171	22.329	15.066	63.68	113.51
5	30	12	991	832	182	22.464	15.8355	73.56	141.35
5	30	13	972	829	178	22.383	15.525	76.21	195.87
5	30	14	888	809	168	21.843	14.256	68.68	236.36
5	30	15	719	649	214	17.523	12.5955	57.47	255.02
5	30	16	463	321	261	8.667	9.774	45.38	266.21
5	30	17	182	36	166	0.972	4.698	33.12	274.79
5	30	18	109	61	93	1.647	2.727	21.01	282.52
5	30	19	14	0	14	0	0.378	9.25	290.25
5	30	20	0	0	0	0	0	--	--
5	30	21	0	0	0	0	0	--	--
5	30	22	0	0	0	0	0	--	--
5	30	23	0	0	0	0	0	--	--
5	30	24	0	0	0	0	0	--	--
5	31	1	0	0	0	0	0	--	--
5	31	2	0	0	0	0	0	--	--

5	31	3	0	0	0	0	0	--	--
5	31	4	0	0	0	0	0	--	--
5	31	5	2	0	2	0	0.054	--	--
5	31	6	60	34	54	0.918	1.539	4	65.93
5	31	7	240	233	154	6.291	5.319	15.52	73.86
5	31	8	465	560	154	15.12	8.3565	27.5	81.48
5	31	9	668	700	164	18.9	11.232	39.72	89.5
5	31	10	833	808	146	21.816	13.2165	51.94	99.1
5	31	11	943	885	114	23.895	14.2695	63.73	113.2
5	31	12	984	874	134	23.598	15.093	73.66	140.97
5	31	13	955	834	156	22.518	14.9985	76.35	195.88
5	31	14	856	716	217	19.332	14.4855	68.8	236.59
5	31	15	698	573	251	15.471	12.8115	57.57	255.22
5	31	16	499	400	247	10.8	10.071	45.47	266.37
5	31	17	287	218	189	5.886	6.426	33.22	274.92
5	31	18	130	121	99	3.267	3.0915	21.11	282.63
5	31	19	15	0	15	0	0.405	9.36	290.35
5	31	20	0	0	0	0	0	--	--
5	31	21	0	0	0	0	0	--	--
5	31	22	0	0	0	0	0	--	--
5	31	23	0	0	0	0	0	--	--
5	31	24	0	0	0	0	0	--	--
				173109	**77086**	**4673.943**	**3866.657**		

Appendix F: Data for June

Month	Day	Hour	Global Radiation (W/m^2)	Direct Radiation (W/m^2)	Diffuse Radiation (W/m^2)	CPV (W)	PV (W)	Elevation (deg)	Azimuth (deg)
6	1	1	0	0	0	0	0	--	--
6	1	2	0	0	0	0	0	--	--
6	1	3	0	0	0	0	0	--	--
6	1	4	0	0	0	0	0	--	--
6	1	5	4	0	4	0	0.108	--	--
6	1	6	72	66	61	1.782	1.7955	4.06	65.8
6	1	7	256	324	137	8.748	5.3055	15.56	73.72
6	1	8	472	588	145	15.876	8.3295	27.54	81.33
6	1	9	673	716	157	19.332	11.205	39.75	89.32
6	1	10	835	814	142	21.978	13.1895	51.98	98.88
6	1	11	942	880	117	23.76	14.2965	63.79	112.9
6	1	12	986	879	131	23.733	15.0795	73.76	140.59
6	1	13	965	866	134	23.382	14.8365	76.5	195.88
6	1	14	879	824	142	22.248	13.7835	68.92	236.81
6	1	15	721	689	182	18.603	12.1905	57.67	255.4
6	1	16	514	492	202	13.284	9.666	45.57	266.51
6	1	17	290	229	186	6.183	6.426	33.32	275.05
6	1	18	114	68	96	1.836	2.835	21.21	282.74
6	1	19	12	0	12	0	0.324	9.46	290.44
6	1	20	0	0	0	0	0	--	--
6	1	21	0	0	0	0	0	--	--
6	1	22	0	0	0	0	0	--	--
6	1	23	0	0	0	0	0	--	--
6	1	24	0	0	0	0	0	--	--
6	2	1	0	0	0	0	0	--	--
6	2	2	0	0	0	0	0	--	--
6	2	3	0	0	0	0	0	--	--
6	2	4	0	0	0	0	0	--	--
6	2	5	2	0	2	0	0.054	--	--
6	2	6	47	0	47	0	1.269	4.11	65.67
6	2	7	192	131	144	3.537	4.536	15.61	73.58
6	2	8	392	297	226	8.019	8.343	27.57	81.18
6	2	9	599	471	259	12.717	11.583	39.78	89.14
6	2	10	779	587	280	15.849	14.2965	52.01	98.66
6	2	11	909	717	237	19.359	15.471	63.83	112.61
6	2	12	924	623	316	16.821	16.74	73.85	140.22
6	2	13	864	572	316	15.444	15.93	76.63	195.87
6	2	14	739	432	352	11.664	14.7285	69.04	237.01
6	2	15	685	566	242	15.282	12.5145	57.77	255.58
6	2	16	544	609	158	16.443	9.477	45.66	266.65
6	2	17	347	484	127	13.068	6.399	33.41	275.16
6	2	18	142	182	95	4.914	3.1995	21.31	282.84
6	2	19	16	0	16	0	0.432	9.57	290.53
6	2	20	0	0	0	0	0	--	--
6	2	21	0	0	0	0	0	--	--
6	2	22	0	0	0	0	0	--	--
6	2	23	0	0	0	0	0	--	--
6	2	24	0	0	0	0	0	--	--
6	3	1	0	0	0	0	0	--	--
6	3	2	0	0	0	0	0	--	--
6	3	3	0	0	0	0	0	--	--
6	3	4	0	0	0	0	0	--	--
6	3	5	3	0	3	0	0.081	--	--
6	3	6	63	59	53	1.593	1.566	4.15	65.54
6	3	7	203	145	150	3.915	4.7655	15.64	73.45
6	3	8	333	96	279	2.592	8.262	27.6	81.03
6	3	9	579	402	290	10.854	11.7315	39.81	88.98
6	3	10	792	583	296	15.741	14.688	52.04	98.46
6	3	11	932	773	208	20.871	15.39	63.88	112.33
6	3	12	984	868	138	23.436	15.147	73.93	139.85
6	3	13	970	880	125	23.76	14.7825	76.76	195.84
6	3	14	891	861	120	23.247	13.6485	69.15	237.2
6	3	15	753	775	146	20.925	12.1365	57.87	255.74
6	3	16	568	667	146	18.009	9.639	45.75	266.79
6	3	17	355	478	137	12.906	6.642	33.5	275.27
6	3	18	147	188	98	5.076	3.3075	21.4	282.93
6	3	19	17	0	17	0	0.459	9.67	290.61
6	3	20	0	0	0	0	0	--	--
6	3	21	0	0	0	0	0	--	--
6	3	22	0	0	0	0	0	--	--
6	3	23	0	0	0	0	0	--	--
6	3	24	0	0	0	0	0	--	--
6	4	1	0	0	0	0	0	--	--
6	4	2	0	0	0	0	0	--	--

6	4	3	0	0	0	0	0	--	--
6	4	4	0	0	0	0	0	--	--
6	4	5	4	0	4	0	0.108	--	--
6	4	6	73	68	62	1.836	1.8225	4.19	65.42
6	4	7	257	323	137	8.721	5.319	15.67	73.32
6	4	8	473	587	146	15.849	8.3565	27.62	80.89
6	4	9	674	717	157	19.359	11.2185	39.83	88.81
6	4	10	836	817	141	22.059	13.1895	52.07	98.26
6	4	11	944	885	114	23.895	14.283	63.91	112.06
6	4	12	993	831	183	22.437	15.876	74.01	139.49
6	4	13	977	835	175	22.545	15.552	76.89	195.8
6	4	14	897	822	161	22.194	14.283	69.26	237.38
6	4	15	757	764	157	20.628	12.339	57.96	255.89
6	4	16	569	666	146	17.982	9.6525	45.84	266.91
6	4	17	355	473	139	12.771	6.669	33.59	275.37
6	4	18	148	188	98	5.076	3.321	21.5	283.02
6	4	19	17	0	17	0	0.459	9.77	290.69
6	4	20	0	0	0	0	0	--	--
6	4	21	0	0	0	0	0	--	--
6	4	22	0	0	0	0	0	--	--
6	4	23	0	0	0	0	0	--	--
6	4	24	0	0	0	0	0	--	--
6	5	1	0	0	0	0	0	--	--
6	5	2	0	0	0	0	0	--	--
6	5	3	0	0	0	0	0	--	--
6	5	4	0	0	0	0	0	--	--
6	5	5	4	0	4	0	0.108	--	--
6	5	6	74	68	62	1.836	1.836	4.23	65.31
6	5	7	257	283	151	7.641	5.508	15.7	73.2
6	5	8	470	521	179	14.067	8.7615	27.64	80.76
6	5	9	673	692	173	18.684	11.421	39.85	88.66
6	5	10	839	783	172	21.141	13.6485	52.08	98.06
6	5	11	950	839	163	22.653	15.0255	63.94	111.79
6	5	12	996	839	177	22.653	15.8355	74.07	139.13
6	5	13	976	832	177	22.464	15.5655	77.01	195.74
6	5	14	894	808	169	21.816	14.3505	69.36	237.54
6	5	15	754	793	131	21.411	11.9475	58.05	256.03
6	5	16	568	709	117	19.143	9.2475	45.93	267.02
6	5	17	355	505	123	13.635	6.453	33.68	275.47
6	5	18	145	180	97	4.86	3.267	21.59	283.1
6	5	19	16	0	16	0	0.432	9.86	290.76
6	5	20	0	0	0	0	0	--	--
6	5	21	0	0	0	0	0	--	--
6	5	22	0	0	0	0	0	--	--
6	5	23	0	0	0	0	0	--	--
6	5	24	0	0	0	0	0	--	--
6	6	1	0	0	0	0	0	--	--
6	6	2	0	0	0	0	0	--	--
6	6	3	0	0	0	0	0	--	--
6	6	4	0	0	0	0	0	--	--
6	6	5	4	0	4	0	0.108	--	--
6	6	6	73	62	62	1.674	1.8225	4.26	65.2
6	6	7	255	313	139	8.451	5.319	15.72	73.08
6	6	8	467	559	154	15.093	8.3835	27.66	80.63
6	6	9	669	696	166	18.792	11.2725	39.86	88.51
6	6	10	832	803	148	21.681	13.23	52.1	97.88
6	6	11	943	880	117	23.76	14.31	63.97	111.54
6	6	12	991	887	125	23.949	15.066	74.14	138.79
6	6	13	974	887	120	23.949	14.769	77.12	195.68
6	6	14	893	861	121	23.247	13.689	69.46	237.68
6	6	15	755	825	106	22.275	11.6235	58.14	256.16
6	6	16	570	711	117	19.197	9.2745	46.02	267.13
6	6	17	357	507	123	13.689	6.48	33.77	275.56
6	6	18	150	201	96	5.427	3.321	21.68	283.17
6	6	19	18	0	18	0	0.486	9.96	290.82
6	6	20	0	0	0	0	0	--	--
6	6	21	0	0	0	0	0	--	--
6	6	22	0	0	0	0	0	--	--
6	6	23	0	0	0	0	0	--	--
6	6	24	0	0	0	0	0	--	--
6	7	1	0	0	0	0	0	--	--
6	7	2	0	0	0	0	0	--	--
6	7	3	0	0	0	0	0	--	--
6	7	4	0	0	0	0	0	--	--
6	7	5	4	0	4	0	0.108	--	--
6	7	6	73	65	62	1.755	1.8225	4.29	65.09
6	7	7	256	281	152	7.587	5.508	15.74	72.97
6	7	8	473	585	146	15.795	8.3565	27.67	80.51
6	7	9	674	695	172	18.765	11.421	39.87	88.37
6	7	10	836	776	175	20.952	13.6485	52.11	97.7
6	7	11	946	824	172	22.248	15.093	63.99	111.3

6	7	12	992	892	122	24.084	15.039	74.19	138.45
6	7	13	974	886	121	23.922	14.7825	77.22	195.6
6	7	14	892	855	124	23.085	13.716	69.56	237.81
6	7	15	755	766	151	20.682	12.231	58.23	256.28
6	7	16	570	656	151	17.712	9.7335	46.1	267.22
6	7	17	357	467	141	12.609	6.723	33.85	275.64
6	7	18	151	188	100	5.076	3.3885	21.76	283.24
6	7	19	18	0	18	0	0.486	10.05	290.88
6	7	20	0	0	0	0	0	--	--
6	7	21	0	0	0	0	0	--	--
6	7	22	0	0	0	0	0	--	--
6	7	23	0	0	0	0	0	--	--
6	7	24	0	0	0	0	0	--	--
6	8	1	0	0	0	0	0	--	--
6	8	2	0	0	0	0	0	--	--
6	8	3	0	0	0	0	0	--	--
6	8	4	0	0	0	0	0	--	--
6	8	5	4	0	4	0	0.108	--	--
6	8	6	74	68	62	1.836	1.836	4.31	64.99
6	8	7	257	284	152	7.668	5.5215	15.75	72.87
6	8	8	473	584	146	15.768	8.3565	27.68	80.39
6	8	9	673	713	158	19.251	11.2185	39.87	88.24
6	8	10	835	814	142	21.978	13.1895	52.12	97.54
6	8	11	944	884	114	23.868	14.283	64.01	111.07
6	8	12	992	890	122	24.03	15.039	74.24	138.12
6	8	13	975	888	119	23.976	14.769	77.32	195.5
6	8	14	894	858	122	23.166	13.716	69.65	237.93
6	8	15	756	789	134	21.303	12.015	58.31	256.39
6	8	16	571	708	118	19.116	9.3015	46.18	267.31
6	8	17	359	506	124	13.662	6.5205	33.93	275.71
6	8	18	152	202	98	5.454	3.375	21.85	283.3
6	8	19	19	0	19	0	0.513	10.13	290.93
6	8	20	0	0	0	0	0	--	--
6	8	21	0	0	0	0	0	--	--
6	8	22	0	0	0	0	0	--	--
6	8	23	0	0	0	0	0	--	--
6	8	24	0	0	0	0	0	--	--
6	9	1	0	0	0	0	0	--	--
6	9	2	0	0	0	0	0	--	--
6	9	3	0	0	0	0	0	--	--
6	9	4	0	0	0	0	0	--	--
6	9	5	4	0	4	0	0.108	--	--
6	9	6	72	57	62	1.539	1.809	4.32	64.89
6	9	7	243	294	134	7.938	5.0895	15.76	72.76
6	9	8	430	446	180	12.042	8.235	27.68	80.28
6	9	9	557	380	282	10.26	11.3265	39.87	88.11
6	9	10	588	233	389	6.291	13.1895	52.12	97.38
6	9	11	501	73	432	1.971	12.5955	64.02	110.85
6	9	12	698	229	475	6.183	15.8355	74.28	137.8
6	9	13	808	458	367	12.366	15.8625	77.42	195.4
6	9	14	816	560	312	15.12	15.228	69.74	238.03
6	9	15	672	540	245	14.58	12.3795	58.4	256.49
6	9	16	492	393	240	10.611	9.882	46.26	267.39
6	9	17	298	230	191	6.21	6.6015	34.01	275.77
6	9	18	127	92	102	2.484	3.0915	21.93	283.35
6	9	19	16	0	16	0	0.432	10.22	290.97
6	9	20	0	0	0	0	0	--	--
6	9	21	0	0	0	0	0	--	--
6	9	22	0	0	0	0	0	--	--
6	9	23	0	0	0	0	0	--	--
6	9	24	0	0	0	0	0	--	--
6	10	1	0	0	0	0	0	--	--
6	10	2	0	0	0	0	0	--	--
6	10	3	0	0	0	0	0	--	--
6	10	4	0	0	0	0	0	--	--
6	10	5	2	0	2	0	0.054	--	--
6	10	6	48	0	48	0	1.296	4.33	64.8
6	10	7	192	127	145	3.429	4.5495	15.76	72.67
6	10	8	389	289	228	7.803	8.3295	27.68	80.18
6	10	9	611	506	245	13.662	11.556	39.87	87.99
6	10	10	800	647	248	17.469	14.148	52.11	97.23
6	10	11	929	784	193	21.168	15.147	64.02	110.64
6	10	12	977	837	159	22.599	15.336	74.32	137.49
6	10	13	961	837	154	22.599	15.0525	77.51	195.28
6	10	14	882	813	150	21.951	13.932	69.83	238.11
6	10	15	746	748	155	20.196	12.1635	58.47	256.57
6	10	16	565	675	131	18.225	9.396	46.34	267.46
6	10	17	355	481	131	12.987	6.561	34.09	275.83
6	10	18	152	193	99	5.211	3.3885	22.01	283.4
6	10	19	19	0	19	0	0.513	10.3	291.01
6	10	20	0	0	0	0	0	-0.8	299.24

6	10	21	0	0	0	0	0	--	--
6	10	22	0	0	0	0	0	--	--
6	10	23	0	0	0	0	0	--	--
6	10	24	0	0	0	0	0	--	--
6	11	1	0	0	0	0	0	--	--
6	11	2	0	0	0	0	0	--	--
6	11	3	0	0	0	0	0	--	--
6	11	4	0	0	0	0	0	--	--
6	11	5	4	0	4	0	0.108	--	--
6	11	6	68	39	62	1.053	1.755	4.34	64.71
6	11	7	242	260	145	7.02	5.2245	15.76	72.58
6	11	8	451	490	178	13.23	8.4915	27.67	80.08
6	11	9	657	657	182	17.739	11.3265	39.86	87.88
6	11	10	824	776	163	20.952	13.3245	52.11	97.09
6	11	11	937	858	131	23.166	14.418	64.02	110.45
6	11	12	949	698	267	18.846	16.416	74.35	137.19
6	11	13	804	450	370	12.15	15.849	77.59	195.15
6	11	14	473	82	399	2.214	11.772	69.91	238.18
6	11	15	598	310	353	8.37	12.8385	58.55	256.65
6	11	16	533	502	210	13.554	10.0305	46.41	267.52
6	11	17	357	502	122	13.554	6.4665	34.16	275.88
6	11	18	154	199	99	5.373	3.4155	22.08	283.44
6	11	19	19	0	19	0	0.513	10.38	291.04
6	11	20	0	0	0	0	0	-0.72	299.27
6	11	21	0	0	0	0	0	--	--
6	11	22	0	0	0	0	0	--	--
6	11	23	0	0	0	0	0	--	--
6	11	24	0	0	0	0	0	--	--
6	12	1	0	0	0	0	0	--	--
6	12	2	0	0	0	0	0	--	--
6	12	3	0	0	0	0	0	--	--
6	12	4	0	0	0	0	0	--	--
6	12	5	3	0	3	0	0.081	--	--
6	12	6	65	29	60	0.783	1.6875	4.34	64.63
6	12	7	239	222	157	5.994	5.346	15.76	72.49
6	12	8	455	463	197	12.501	8.802	27.67	79.99
6	12	9	630	561	225	15.147	11.5425	39.85	87.77
6	12	10	747	432	379	11.664	15.201	52.1	96.96
6	12	11	789	422	393	11.394	15.957	64.02	110.26
6	12	12	914	512	414	13.824	17.928	74.37	136.9
6	12	13	950	687	287	18.549	16.6995	77.66	195
6	12	14	898	783	191	21.141	14.7015	69.99	238.23
6	12	15	760	751	165	20.277	12.4875	58.62	256.71
6	12	16	575	657	152	17.739	9.8145	46.48	267.57
6	12	17	363	505	126	13.635	6.6015	34.24	275.92
6	12	18	156	205	100	5.535	3.456	22.15	283.47
6	12	19	20	0	20	0	0.54	10.45	291.07
6	12	20	0	0	0	0	0	-0.65	299.29
6	12	21	0	0	0	0	0	--	--
6	12	22	0	0	0	0	0	--	--
6	12	23	0	0	0	0	0	--	--
6	12	24	0	0	0	0	0	--	--
6	13	1	0	0	0	0	0	--	--
6	13	2	0	0	0	0	0	--	--
6	13	3	0	0	0	0	0	--	--
6	13	4	0	0	0	0	0	--	--
6	13	5	4	0	4	0	0.108	--	--
6	13	6	73	61	63	1.647	1.836	4.34	64.55
6	13	7	255	314	138	8.478	5.3055	15.75	72.41
6	13	8	469	574	149	15.498	8.343	27.65	79.9
6	13	9	669	701	163	18.927	11.232	39.84	87.68
6	13	10	830	798	150	21.546	13.23	52.08	96.84
6	13	11	938	864	127	23.328	14.3775	64.01	110.09
6	13	12	987	871	135	23.517	15.147	74.39	136.63
6	13	13	964	844	149	22.788	15.0255	77.73	194.85
6	13	14	864	712	222	19.224	14.661	70.06	238.27
6	13	15	746	767	137	20.709	11.9205	58.69	256.76
6	13	16	571	689	127	18.603	9.423	46.55	267.61
6	13	17	363	501	128	13.527	6.6285	34.3	275.95
6	13	18	157	206	100	5.562	3.4695	22.22	283.5
6	13	19	20	0	20	0	0.54	10.52	291.09
6	13	20	0	0	0	0	0	-0.57	299.3
6	13	21	0	0	0	0	0	--	--
6	13	22	0	0	0	0	0	--	--
6	13	23	0	0	0	0	0	--	--
6	13	24	0	0	0	0	0	--	--
6	14	1	0	0	0	0	0	--	--
6	14	2	0	0	0	0	0	--	--
6	14	3	0	0	0	0	0	--	--
6	14	4	0	0	0	0	0	--	--
6	14	5	4	0	4	0	0.108	--	--

6	14	6	73	61	63	1.647	1.836	4.33	64.48
6	14	7	255	312	139	8.424	5.319	15.74	72.34
6	14	8	468	571	150	15.417	8.343	27.64	79.83
6	14	9	668	699	163	18.873	11.2185	39.82	87.59
6	14	10	829	797	151	21.519	13.23	52.07	96.72
6	14	11	938	865	126	23.355	14.364	64	109.93
6	14	12	981	852	148	23.004	15.2415	74.4	136.37
6	14	13	955	811	172	21.897	15.2145	77.79	194.68
6	14	14	859	695	232	18.765	14.7285	70.13	238.29
6	14	15	744	759	142	20.493	11.961	58.76	256.8
6	14	16	572	688	127	18.576	9.4365	46.62	267.65
6	14	17	364	505	127	13.635	6.6285	34.37	275.98
6	14	18	158	209	100	5.643	3.483	22.29	283.52
6	14	19	20	0	20	0	0.54	10.59	291.11
6	14	20	0	0	0	0	0	-0.5	299.31
6	14	21	0	0	0	0	0	--	--
6	14	22	0	0	0	0	0	--	--
6	14	23	0	0	0	0	0	--	--
6	14	24	0	0	0	0	0	--	--
6	15	1	0	0	0	0	0	--	--
6	15	2	0	0	0	0	0	--	--
6	15	3	0	0	0	0	0	--	--
6	15	4	0	0	0	0	0	--	--
6	15	5	4	0	4	0	0.108	--	--
6	15	6	70	48	62	1.296	1.782	4.32	64.41
6	15	7	251	301	140	8.127	5.2785	15.72	72.27
6	15	8	467	569	150	15.363	8.3295	27.62	79.75
6	15	9	668	699	163	18.873	11.2185	39.8	87.5
6	15	10	830	799	149	21.573	13.2165	52.04	96.62
6	15	11	939	870	123	23.49	14.337	63.99	109.78
6	15	12	988	874	133	23.598	15.1335	74.41	136.12
6	15	13	972	871	131	23.517	14.8905	77.84	194.5
6	15	14	893	842	132	22.734	13.8375	70.2	238.3
6	15	15	757	775	142	20.925	12.1365	58.83	256.82
6	15	16	575	698	124	18.846	9.4365	46.68	267.67
6	15	17	365	504	128	13.608	6.6555	34.43	276
6	15	18	159	210	101	5.67	3.51	22.36	283.54
6	15	19	21	0	21	0	0.567	10.65	291.11
6	15	20	0	0	0	0	0	-0.44	299.31
6	15	21	0	0	0	0	0	--	--
6	15	22	0	0	0	0	0	--	--
6	15	23	0	0	0	0	0	--	--
6	15	24	0	0	0	0	0	--	--
6	16	1	0	0	0	0	0	--	--
6	16	2	0	0	0	0	0	--	--
6	16	3	0	0	0	0	0	--	--
6	16	4	0	0	0	0	0	--	--
6	16	5	4	0	4	0	0.108	--	--
6	16	6	73	64	62	1.728	1.8225	4.31	64.35
6	16	7	254	312	138	8.424	5.292	15.7	72.21
6	16	8	467	570	150	15.39	8.3295	27.59	79.69
6	16	9	667	699	163	18.873	11.205	39.77	87.43
6	16	10	822	804	137	21.708	12.9465	52.02	96.53
6	16	11	907	755	199	20.385	14.931	63.97	109.65
6	16	12	903	592	325	15.984	16.578	74.4	135.89
6	16	13	808	468	356	12.636	15.714	77.89	194.31
6	16	14	631	234	419	6.318	14.175	70.26	238.28
6	16	15	654	453	294	12.231	12.798	58.89	256.84
6	16	16	549	577	175	15.579	9.774	46.74	267.69
6	16	17	363	511	122	13.797	6.5475	34.49	276.01
6	16	18	160	210	101	5.67	3.5235	22.42	283.54
6	16	19	21	0	21	0	0.567	10.72	291.12
6	16	20	0	0	0	0	0	-0.38	299.31
6	16	21	0	0	0	0	0	--	--
6	16	22	0	0	0	0	0	--	--
6	16	23	0	0	0	0	0	--	--
6	16	24	0	0	0	0	0	--	--
6	17	1	0	0	0	0	0	--	--
6	17	2	0	0	0	0	0	--	--
6	17	3	0	0	0	0	0	--	--
6	17	4	0	0	0	0	0	--	--
6	17	5	4	0	4	0	0.108	--	--
6	17	6	73	64	61	1.728	1.809	4.29	64.3
6	17	7	255	280	151	7.56	5.481	15.67	72.16
6	17	8	470	529	175	14.283	8.7075	27.56	79.63
6	17	9	670	712	157	19.224	11.1645	39.74	87.36
6	17	10	832	811	142	21.897	13.149	51.99	96.45
6	17	11	941	876	119	23.652	14.31	63.94	109.53
6	17	12	987	873	133	23.571	15.12	74.4	135.67
6	17	13	969	859	139	23.193	14.958	77.93	194.11
6	17	14	887	817	149	22.059	13.986	70.32	238.26

6	17	15	756	795	123	21.465	11.8665	58.95	256.84
6	17	16	576	696	125	18.792	9.4635	46.8	267.69
6	17	17	367	505	128	13.635	6.6825	34.55	276.02
6	17	18	161	212	101	5.724	3.537	22.47	283.54
6	17	19	21	0	21	0	0.567	10.77	291.11
6	17	20	0	0	0	0	0	-0.32	299.3
6	17	21	0	0	0	0	0	--	--
6	17	22	0	0	0	0	0	--	--
6	17	23	0	0	0	0	0	--	--
6	17	24	0	0	0	0	0	--	--
6	18	1	0	0	0	0	0	--	--
6	18	2	0	0	0	0	0	--	--
6	18	3	0	0	0	0	0	--	--
6	18	4	0	0	0	0	0	--	--
6	18	5	4	0	4	0	0.108	--	--
6	18	6	72	59	62	1.593	1.809	4.26	64.25
6	18	7	253	312	138	8.424	5.2785	15.65	72.11
6	18	8	467	573	148	15.471	8.3025	27.53	79.58
6	18	9	668	704	161	19.008	11.1915	39.71	87.3
6	18	10	830	803	146	21.681	13.176	51.96	96.37
6	18	11	939	872	121	23.544	14.31	63.91	109.42
6	18	12	989	879	129	23.733	15.093	74.39	135.47
6	18	13	974	877	127	23.679	14.8635	77.97	193.9
6	18	14	896	848	129	22.896	13.8375	70.37	238.21
6	18	15	757	767	146	20.709	12.1905	59	256.83
6	18	16	570	629	162	16.983	9.882	46.86	267.69
6	18	17	356	454	141	12.258	6.7095	34.61	276.01
6	18	18	158	196	103	5.292	3.5235	22.53	283.54
6	18	19	21	0	21	0	0.567	10.83	291.1
6	18	20	0	0	0	0	0	-0.27	299.28
6	18	21	0	0	0	0	0	--	--
6	18	22	0	0	0	0	0	--	--
6	18	23	0	0	0	0	0	--	--
6	18	24	0	0	0	0	0	--	--
6	19	1	0	0	0	0	0	--	--
6	19	2	0	0	0	0	0	--	--
6	19	3	0	0	0	0	0	--	--
6	19	4	0	0	0	0	0	--	--
6	19	5	4	0	4	0	0.108	--	--
6	19	6	71	60	61	1.62	1.782	4.23	64.2
6	19	7	252	311	137	8.397	5.2515	15.61	72.06
6	19	8	467	575	147	15.525	8.289	27.5	79.53
6	19	9	668	707	159	19.089	11.1645	39.67	87.25
6	19	10	830	807	144	21.789	13.149	51.92	96.31
6	19	11	940	875	119	23.625	14.2965	63.88	109.32
6	19	12	989	880	128	23.76	15.0795	74.37	135.29
6	19	13	975	878	126	23.706	14.8635	77.99	193.69
6	19	14	897	851	127	22.977	13.824	70.42	238.15
6	19	15	759	773	144	20.871	12.1905	59.05	256.81
6	19	16	573	635	160	17.145	9.8955	46.91	267.68
6	19	17	358	427	155	11.529	6.9255	34.66	276
6	19	18	158	180	107	4.86	3.5775	22.58	283.53
6	19	19	21	0	21	0	0.567	10.88	291.09
6	19	20	0	0	0	0	0	-0.22	299.26
6	19	21	0	0	0	0	0	--	--
6	19	22	0	0	0	0	0	--	--
6	19	23	0	0	0	0	0	--	--
6	19	24	0	0	0	0	0	--	--
6	20	1	0	0	0	0	0	--	--
6	20	2	0	0	0	0	0	--	--
6	20	3	0	0	0	0	0	--	--
6	20	4	0	0	0	0	0	--	--
6	20	5	4	0	4	0	0.108	--	--
6	20	6	71	60	61	1.62	1.782	4.2	64.16
6	20	7	252	311	137	8.397	5.2515	15.58	72.02
6	20	8	467	577	147	15.579	8.289	27.46	79.49
6	20	9	668	708	158	19.116	11.151	39.63	87.21
6	20	10	830	808	143	21.816	13.1355	51.88	96.26
6	20	11	940	875	119	23.625	14.2965	63.84	109.24
6	20	12	989	880	128	23.76	15.0795	74.35	135.12
6	20	13	975	878	126	23.706	14.8635	78.01	193.46
6	20	14	898	851	127	22.977	13.8375	70.47	238.08
6	20	15	763	816	112	22.032	11.8125	59.1	256.78
6	20	16	582	708	121	19.116	9.4905	46.96	267.66
6	20	17	371	515	126	13.905	6.7095	34.71	275.98
6	20	18	164	218	102	5.886	3.591	22.63	283.51
6	20	19	22	0	22	0	0.594	10.92	291.07
6	20	20	0	0	0	0	0	-0.18	299.24
6	20	21	0	0	0	0	0	--	--
6	20	22	0	0	0	0	0	--	--
6	20	23	0	0	0	0	0	--	--

6	20	24	0	0	0	0	0	--	--
6	21	1	0	0	0	0	0	--	--
6	21	2	0	0	0	0	0	--	--
6	21	3	0	0	0	0	0	--	--
6	21	4	0	0	0	0	0	--	--
6	21	5	4	0	4	0	0.108	--	--
6	21	6	71	57	61	1.539	1.782	4.16	64.13
6	21	7	251	276	150	7.452	5.4135	15.54	71.99
6	21	8	467	526	175	14.202	8.667	27.42	79.46
6	21	9	666	685	174	18.495	11.34	39.59	87.18
6	21	10	826	795	150	21.465	13.176	51.84	96.21
6	21	11	931	847	137	22.869	14.418	63.8	109.17
6	21	12	941	672	284	18.144	16.5375	74.32	134.97
6	21	13	841	512	346	13.824	16.0245	78.03	193.23
6	21	14	634	237	419	6.399	14.2155	70.51	237.99
6	21	15	681	513	272	13.851	12.8655	59.15	256.74
6	21	16	570	606	176	16.362	10.071	47	267.63
6	21	17	374	489	142	13.203	6.966	34.75	275.96
6	21	18	165	210	106	5.67	3.6585	22.67	283.48
6	21	19	22	0	22	0	0.594	10.97	291.04
6	21	20	0	0	0	0	0	-0.14	299.21
6	21	21	0	0	0	0	0	--	--
6	21	22	0	0	0	0	0	--	--
6	21	23	0	0	0	0	0	--	--
6	21	24	0	0	0	0	0	--	--
6	22	1	0	0	0	0	0	--	--
6	22	2	0	0	0	0	0	--	--
6	22	3	0	0	0	0	0	--	--
6	22	4	0	0	0	0	0	--	--
6	22	5	3	0	3	0	0.081	--	--
6	22	6	70	53	61	1.431	1.7685	4.12	64.1
6	22	7	251	275	150	7.425	5.4135	15.49	71.97
6	22	8	466	527	174	14.229	8.64	27.37	79.44
6	22	9	667	712	156	19.224	11.1105	39.54	87.15
6	22	10	830	811	141	21.897	13.1085	51.79	96.18
6	22	11	940	878	117	23.706	14.2695	63.76	109.12
6	22	12	965	752	230	20.304	16.1325	74.28	134.83
6	22	13	868	547	338	14.769	16.281	78.04	192.99
6	22	14	633	236	420	6.372	14.2155	70.54	237.88
6	22	15	634	375	335	10.125	13.0815	59.19	256.68
6	22	16	533	506	204	13.662	9.9495	47.04	267.59
6	22	17	360	429	156	11.583	6.966	34.8	275.92
6	22	18	160	182	108	4.914	3.618	22.71	283.45
6	22	19	21	0	21	0	0.567	11	291.01
6	22	20	0	0	0	0	0	-0.1	299.17
6	22	21	0	0	0	0	0	--	--
6	22	22	0	0	0	0	0	--	--
6	22	23	0	0	0	0	0	--	--
6	22	24	0	0	0	0	0	--	--
6	23	1	0	0	0	0	0	--	--
6	23	2	0	0	0	0	0	--	--
6	23	3	0	0	0	0	0	--	--
6	23	4	0	0	0	0	0	--	--
6	23	5	3	0	3	0	0.081	--	--
6	23	6	70	54	60	1.458	1.755	4.08	64.07
6	23	7	251	277	149	7.479	5.4	15.45	71.95
6	23	8	468	537	171	14.499	8.6265	27.32	79.42
6	23	9	667	693	170	18.711	11.2995	39.5	87.13
6	23	10	821	760	176	20.52	13.4595	51.74	96.15
6	23	11	912	722	235	19.494	15.4845	63.71	109.07
6	23	12	961	727	250	19.629	16.3485	74.24	134.71
6	23	13	949	728	244	19.656	16.1055	78.03	192.75
6	23	14	875	717	225	19.359	14.85	70.57	237.76
6	23	15	751	717	179	19.359	12.555	59.22	256.62
6	23	16	577	637	162	17.199	9.9765	47.08	267.54
6	23	17	371	470	147	12.69	6.993	34.83	275.88
6	23	18	164	199	107	5.373	3.6585	22.75	283.41
6	23	19	22	0	22	0	0.594	11.04	290.97
6	23	20	0	0	0	0	0	-0.07	299.13
6	23	21	0	0	0	0	0	--	--
6	23	22	0	0	0	0	0	--	--
6	23	23	0	0	0	0	0	--	--
6	23	24	0	0	0	0	0	--	--
6	24	1	0	0	0	0	0	--	--
6	24	2	0	0	0	0	0	--	--
6	24	3	0	0	0	0	0	--	--
6	24	4	0	0	0	0	0	--	--
6	24	5	3	0	3	0	0.081	--	--
6	24	6	69	56	60	1.512	1.7415	4.03	64.06
6	24	7	251	281	148	7.587	5.3865	15.4	71.93
6	24	8	468	544	168	14.688	8.586	27.27	79.41

6	24	9	671	709	163	19.143	11.259	39.44	87.12
6	24	10	833	784	168	21.168	13.5135	51.69	96.14
6	24	11	937	807	180	21.789	15.0795	63.66	109.05
6	24	12	983	798	203	21.546	16.011	74.2	134.61
6	24	13	963	779	209	21.033	15.822	78.03	192.5
6	24	14	879	709	237	19.143	15.066	70.6	237.62
6	24	15	759	742	166	20.034	12.4875	59.26	256.54
6	24	16	583	656	155	17.712	9.963	47.12	267.48
6	24	17	373	516	127	13.932	6.75	34.87	275.84
6	24	18	166	221	103	5.967	3.6315	22.78	283.37
6	24	19	23	0	23	0	0.621	11.07	290.93
6	24	20	0	0	0	0	0	-0.04	299.09
6	24	21	0	0	0	0	0	--	--
6	24	22	0	0	0	0	0	--	--
6	24	23	0	0	0	0	0	--	--
6	24	24	0	0	0	0	0	--	--
6	25	1	0	0	0	0	0	--	--
6	25	2	0	0	0	0	0	--	--
6	25	3	0	0	0	0	0	--	--
6	25	4	0	0	0	0	0	--	--
6	25	5	3	0	3	0	0.081	--	--
6	25	6	69	48	61	1.296	1.755	3.98	64.05
6	25	7	250	279	148	7.533	5.373	15.34	71.92
6	25	8	465	531	172	14.337	8.5995	27.22	79.4
6	25	9	667	698	167	18.846	11.259	39.39	87.12
6	25	10	831	778	171	21.006	13.527	51.64	96.14
6	25	11	941	821	172	22.167	15.0255	63.61	109.03
6	25	12	994	831	181	22.437	15.8625	74.15	134.53
6	25	13	982	834	175	22.518	15.6195	78.01	192.24
6	25	14	907	827	157	22.329	14.364	70.62	237.47
6	25	15	772	788	143	21.276	12.3525	59.29	256.45
6	25	16	590	679	147	18.333	9.9495	47.15	267.42
6	25	17	378	497	141	13.419	7.0065	34.9	275.78
6	25	18	168	214	107	5.778	3.7125	22.81	283.32
6	25	19	23	0	23	0	0.621	11.1	290.88
6	25	20	0	0	0	0	0	-0.02	299.04
6	25	21	0	0	0	0	0	--	--
6	25	22	0	0	0	0	0	--	--
6	25	23	0	0	0	0	0	--	--
6	25	24	0	0	0	0	0	--	--
6	26	1	0	0	0	0	0	--	--
6	26	2	0	0	0	0	0	--	--
6	26	3	0	0	0	0	0	--	--
6	26	4	0	0	0	0	0	--	--
6	26	5	3	0	3	0	0.081	--	--
6	26	6	68	54	59	1.458	1.7145	3.92	64.04
6	26	7	249	278	147	7.506	5.346	15.29	71.92
6	26	8	465	535	170	14.445	8.5725	27.16	79.4
6	26	9	668	705	164	19.035	11.232	39.33	87.12
6	26	10	833	788	166	21.276	13.4865	51.58	96.14
6	26	11	945	835	163	22.545	14.958	63.55	109.03
6	26	12	998	845	172	22.815	15.795	74.1	134.46
6	26	13	986	846	168	22.842	15.579	77.99	191.99
6	26	14	909	835	152	22.545	14.3235	70.63	237.3
6	26	15	772	768	158	20.736	12.555	59.31	256.35
6	26	16	589	673	149	18.171	9.963	47.18	267.34
6	26	17	376	488	143	13.176	7.0065	34.93	275.72
6	26	18	167	226	103	6.102	3.645	22.84	283.26
6	26	19	23	0	23	0	0.621	11.12	290.82
6	26	20	0	0	0	0	0	-0.01	298.98
6	26	21	0	0	0	0	0	--	--
6	26	22	0	0	0	0	0	--	--
6	26	23	0	0	0	0	0	--	--
6	26	24	0	0	0	0	0	--	--
6	27	1	0	0	0	0	0	--	--
6	27	2	0	0	0	0	0	--	--
6	27	3	0	0	0	0	0	--	--
6	27	4	0	0	0	0	0	--	--
6	27	5	3	0	3	0	0.081	--	--
6	27	6	67	51	59	1.377	1.701	3.86	64.04
6	27	7	246	305	135	8.235	5.1435	15.23	71.93
6	27	8	461	573	146	15.471	8.1945	27.1	79.41
6	27	9	663	709	156	19.143	11.0565	39.27	87.14
6	27	10	827	813	139	21.951	13.041	51.52	96.16
6	27	11	940	885	111	23.895	14.1885	63.49	109.04
6	27	12	993	829	182	22.383	15.8625	74.04	134.41
6	27	13	981	832	176	22.464	15.6195	77.96	191.73
6	27	14	906	825	158	22.275	14.364	70.64	237.12
6	27	15	773	790	142	21.33	12.3525	59.34	256.24
6	27	16	593	685	145	18.495	9.963	47.2	267.26
6	27	17	381	471	155	12.717	7.236	34.95	275.65

6	27	18	169	218	107	5.886	3.726	22.86	283.2
6	27	19	23	0	23	0	0.621	11.14	290.76
6	27	20	0	0	0	0	0	0.01	298.92
6	27	21	0	0	0	0	0	--	--
6	27	22	0	0	0	0	0	--	--
6	27	23	0	0	0	0	0	--	--
6	27	24	0	0	0	0	0	--	--
6	28	1	0	0	0	0	0	--	--
6	28	2	0	0	0	0	0	--	--
6	28	3	0	0	0	0	0	--	--
6	28	4	0	0	0	0	0	--	--
6	28	5	3	0	3	0	0.081	--	--
6	28	6	66	50	58	1.35	1.674	3.8	64.05
6	28	7	245	270	147	7.29	5.292	15.16	71.94
6	28	8	460	521	174	14.067	8.559	27.04	79.43
6	28	9	662	709	156	19.143	11.043	39.21	87.16
6	28	10	826	812	139	21.924	13.0275	51.46	96.19
6	28	11	939	884	112	23.868	14.1885	63.43	109.07
6	28	12	990	887	123	23.949	15.0255	73.97	134.38
6	28	13	976	882	123	23.814	14.8365	77.93	191.47
6	28	14	900	867	113	23.409	13.6755	70.65	236.93
6	28	15	765	780	141	21.06	12.231	59.35	256.11
6	28	16	583	701	125	18.927	9.558	47.23	267.17
6	28	17	373	508	130	13.716	6.7905	34.97	275.57
6	28	18	167	220	104	5.94	3.6585	22.88	283.13
6	28	19	23	0	23	0	0.621	11.15	290.7
6	28	20	0	0	0	0	0	0.01	298.85
6	28	21	0	0	0	0	0	--	--
6	28	22	0	0	0	0	0	--	--
6	28	23	0	0	0	0	0	--	--
6	28	24	0	0	0	0	0	--	--
6	29	1	0	0	0	0	0	--	--
6	29	2	0	0	0	0	0	--	--
6	29	3	0	0	0	0	0	--	--
6	29	4	0	0	0	0	0	--	--
6	29	5	3	0	3	0	0.081	--	--
6	29	6	64	44	57	1.188	1.6335	3.73	64.06
6	29	7	240	290	136	7.83	5.076	15.1	71.96
6	29	8	454	551	152	14.877	8.181	26.98	79.46
6	29	9	656	690	163	18.63	11.0565	39.15	87.19
6	29	10	821	795	149	21.465	13.095	51.4	96.23
6	29	11	934	869	121	23.463	14.2425	63.36	109.11
6	29	12	986	875	131	23.625	15.0795	73.9	134.37
6	29	13	973	872	130	23.544	14.8905	77.89	191.2
6	29	14	898	860	118	23.22	13.716	70.65	236.72
6	29	15	764	777	142	20.979	12.231	59.37	255.98
6	29	16	584	702	124	18.954	9.558	47.24	267.07
6	29	17	374	512	129	13.824	6.7905	34.99	275.49
6	29	18	167	221	104	5.967	3.6585	22.89	283.06
6	29	19	23	0	23	0	0.621	11.16	290.62
6	29	20	0	0	0	0	0	0.02	298.78
6	29	21	0	0	0	0	0	--	--
6	29	22	0	0	0	0	0	--	--
6	29	23	0	0	0	0	0	--	--
6	29	24	0	0	0	0	0	--	--
6	30	1	0	0	0	0	0	--	--
6	30	2	0	0	0	0	0	--	--
6	30	3	0	0	0	0	0	--	--
6	30	4	0	0	0	0	0	--	--
6	30	5	3	0	3	0	0.081	--	--
6	30	6	64	44	56	1.188	1.62	3.66	64.07
6	30	7	240	292	135	7.884	5.0625	15.03	71.98
6	30	8	453	552	151	14.904	8.154	26.91	79.49
6	30	9	654	689	164	18.603	11.043	39.08	87.23
6	30	10	818	789	152	21.303	13.095	51.33	96.27
6	30	11	930	858	128	23.166	14.283	63.29	109.16
6	30	12	980	856	144	23.112	15.174	73.83	134.38
6	30	13	965	844	149	22.788	15.039	77.84	190.94
6	30	14	886	817	145	22.059	13.9185	70.64	236.49
6	30	15	759	787	129	21.249	11.988	59.38	255.83
6	30	16	582	694	127	18.738	9.5715	47.26	266.96
6	30	17	374	511	129	13.797	6.7905	35	275.4
6	30	18	168	224	103	6.048	3.6585	22.9	282.97
6	30	19	23	0	23	0	0.621	11.16	290.55
6	30	20	0	0	0	0	0	0.01	298.71
6	30	21	0	0	0	0	0	--	--
6	30	22	0	0	0	0	0	--	--
6	30	23	0	0	0	0	0	--	--
6	30	24	0	0	0	0	0	--	--
				220541	**62155**	**5954.607**	**3977.289**		