ISSN NO. 2320-5407

Journal homepage: http://www.journalijar.com

INTERNATIONAL JOURNAL OF ADVANCED RESEARCH

RESEARCH ARTICLE

Investigation of the Ultraviolet rays(UV-Ray) in MAKHWAH, Kingdom Saudi Arabia.

A. M. Shaffie1.

Egyptian Meteorological Authority (EMA), P.O. Box: 11784, Cairo, Egypt.

(Now: Head of department of Physics, Faculty of Science and Art kelwa, Al - Baha University, Kingdom Of Saudi Arabia

Manuscript Info

Manuscript History:

Received: 11 January 2014
Final Accepted: 24 February 2014
Published Online: March 2014

Key words:
UV-ray, afternoon, diseases, earth, ozone layer, psychoactive and depleting

Corresponding Author

A. M. Shaffie1

Abstract

in Makhwah, Kingdom Saudi Arabia, during the time 1996-2002. Ozone layer in the stratosphere serve as shield harmful UV rays His presence in this layer is useful for the protection of life and without it perhaps being human to several diseases such as skin cancer and cataracts and weakened immune systems as a result of breaking the DNA (DNA) by UV and less plant production plant as a result of exposure to different diseases.The ozone gas is considered among the endothermic gas absorbs infrared reflected from the surface of the earth and destined to outer space and thus contribute to the heating of the earth. The proportion of ozone harmful to beneficial ratio of ozone in the atmosphere depends on the balance between consuming processes (destructive)-depleting substances and those operations producing any imbalance in this will lead to serious consequences for life on Earth.That God flesh of the dangers of exposure to UV ozone layer man must reduce the use of psychoactive substances on ozone depletion.Man must good knowledge of the index of exposure to ultraviolet rays and how to protect himself from the dangers and lack of exposure to direct sunlight at least in times of 10 am to 04 Pm in the afternoon.The amount of exposure to ultraviolet rays in various cloud cover is Maximum values in clear sky and Minimum values in overcast cloud while in middle in case scattered and broken cloud.The summer and spring seasons susceptible to these harmful rays of UV-Capacity while less-Capacity Price impact of this unit in winter and autumn.

In MAKHWAH Region which the correct height is 0.4 from sea level, the amount of exposure to ultraviolet rays in various cloud cover is Maximum values in clear sky which recorded 5 degree and Minimum values in overcast cloud which recorded 2 degree while in middle in case scattered and broken cloud.

INTRODUCTION

1- Layers of the Atmosphere.

In fact the atmosphere is defined as some of air layers around the earth which contain number of different gases from earth to up the end of the atmosphere, it associated with the shape of the earth and gravity where the density of the air is decrease with height while the temperature is different according to the properties of each layer as in (Fig 1).Figure 1 show that the distributions of the atmospheric layers according to the temperature with height as follow:-

TROPOSPHERE LAYER: This layer over the earth directly and the thickness from 10 kilometer at the pole and 12 kilometer at the middle latitude but reach to 17 kilometer at equator, it characterized by

a- The all climate phenomena.
b- The temperature decries with height.
c- Contain on 80% from atmospheric gases and water vapor.

d- Derives heat from absorption rays from earth surface.

- **TROPOPAUSE LAYER:** This layer separate between troposphere and stratosphere layer and its thickness is approximately 3 kilometer and characterized by
  a- No weather phenomena in this layer, so consider the best layer to fly.
  b- The temperature is constant with height.
- **STRATOSPHERE LAYER:** The thickness of this layer is approximately 20 kilometer at pole and 35 kilometer at middle latitude but reaches to 55 kilometer at equator from earth surface and characterized by
  a- The temperature is increase with height.
  b- Prevent the UV-RAYS that reach to earth surface.
  c- Contain Ozone layer as follow

$$O_2 + UV \rightarrow O + O$$
$$O + O_2 \rightarrow O_3 \quad Ozone$$

- **STRATOPAUSE LAYER:** This layer is separate between stratosphere and mesosphere layer and its thickness is 3 kilometer which characterized by
  a- The temperature is constant with height.
  b- The best layer to Supersonic flight.
  c- The main layer in decrease of the OZONE layer because its contain on the fly's exhausts and some of particles from Carbon monoxide (Co), Nitrogen monoxide (No) and Chlorofluorocarbon (CFC) which remain in this layer to approximately (30-50) year and reaction as follow

$$O_2 + UV \rightarrow O + O$$
$$CO + O \rightarrow CO_2$$

$$the\ above\ equations\ show\ that\ after\ effect\ UV - RAYS\ on\ Oxygen\ we\ get\ mono\ Oxgen\ which\ reaction\ with\ Carbon\ monoxide\ to\ give\ Carbon\ dioxide\ instead\ of\ Ozone$$

- **MESOSPHERE LAYER:** The thickness of this layer is approximately 60 kilometer at pole and 70 kilometer at middle latitude but reaches to 80 kilometer at equator and characterized by
  a- The temperature is decrease with height reach to minus 95^o.
  b- The pressure is decrease 200 once if compere with the pressure at earth
- **MESOPAUSE LAYER:** This layer is separate between mesosphere and ionosphere layer and its thickness is 3 kilometer which characterized by
  a- The temperature is constant with height.
  b- The best layer in wireless communication.
- **IONOSPHERE LAYER:** This layer is above the mesopause layer and considers the end layer in the atmosphere and called (Atheer) which characterized by
  a- The temperature is increase with height may be reach to 1650^o.
  b- Have higher ability to reflect radio waves and return to Earth.
  c- The air in this layer in case of ionization because atoms air decomposed into neutrons, electrons and protons due to photo Chemical interactions and reflected at this layer of electromagnetic waves and bounce back around the ground so this layer consider great importance in television broadcasting. [1]

2-The Relation between Ozone and Ultraviolet Rays.

According to the chemical previously equations in pollution of the atmosphere (Ozone layer), not only the exhaust jet engines of carbon monoxide but also the gas, impurities, water vapor, nuclear radiation, aerosol dispensers and other pollutants which remains constant in this layer for long years of up to 50 year as mono nitrogen oxide (NO) and (Chlorofluorocarbon) (CFC) which represent the same effect of carbon monoxide in the equations mentioned previously.

When Pass the ULTRAVIOLET from stratosphere,the amount of absorption of this radiation in this region depend on two factors, the first is the number of oxygen molecules that hinder the course UV, and the second the strength ofincident radiation where increasing oxygen molecules in the lower stratosphere, where the air is moredensity and near to the troposphere layer which comes oxygen, but the UV be more strength in the upper part of it.

The short wavelength of UV which ranges from (230 to 290 nm) (1nm = 10^{-9} m) absorbs in the stratosphere, as well as part of the wavelength relatively large and that up to 350 nanometers and soon be ozone, it would be easy disintegration of the molecule of oxygen binding energy in part (O_3) lower than in

molecule (O_2) therefore, it would be easy for UV wavelength relatively large any less energy to break molecule Ozone resulting molecule mono oxygen (O) and oxygen (O_2).

The process does not occur break oxygen molecules only in the presence of sunlight during the day, while we find that the Ozone layer increases at night when there is no UV and that drives chemical reactions.

The importance of the ozone layer in it works on filtration and purification sunlight, allowing the passage of rays visible that benefit life on Earth (such as ultraviolet wavelength higher and less energy), and book cosmic rays harmful (such as ultraviolet wavelength short the most energy) that reach the earth, and therefore considered as a candidate projector.

In order to realize the importance of this process, we have to point out what the world American astronomer (Charles Oiot) of that received by the Earth's surface from the sun's heat during the day in the absence of the ozone layer enough to convert 35 million tons of ice to boiling water at a temperature of 100 m during the only 50 seconds, but the atmosphere surrounding the Earth and the ozone layer and the flesh by God Almighty dissipate the bulk of that heat.

The measured concentration of Ozone in units called Dobson (Dobson) which indicates the thickness of the Ozone layer as (1 Dobson = 0.0001 cm) at atmospheric pressure (76 cm Hg) and temperature equal to zero Celsius, while measured wavelength of radioactive UV unit nm[1].

3- The Distribution of Ozone Stations in World

Fig (2) show that the distribution of Stations of measured Ozone around the world, which show No any stations in Kingdom of Saudi Arabia, one station in Egypt and large number of stations in Europe and so on.

4- The Risks of Ozone Hole

If weak shield for any reason, the consequences will be bad for neighborhoods that runs on the surface of the earth or that swim in the waters of the oceans and seas, lakes and rivers or flying in the air and scientists say that the results could result in hole of Ozone would be awesome and painful, especially if continued hole of Ozone in breadth and thus leak a great deal of ultraviolet radiation to the Earth's surface [3].

The atmosphere, and therefore considered to be of great importance in climate studies [4]. And lies hole of Ozone danger in large changes in the Earth's climate and temperature rise in the world, as well as rising ocean levels which is threatening the sinking of several cities and coastal areas in the world, as in Fig (3) although students often uncertain about that. Such environmental risks need for international cooperation to prevent the occurrence of have been held in several international conventions and conferences to study the tragedy the hole of Ozone and put urgent measures and long.

5 - The naturaleffectsofultravioletradioactive

Located UV as we mentioned earlier in the rank electromagnetic spectrum after the end of UV on the edge of the visible light, and are considered the sun is natural source of these rays, which are considered sun body black ideal severe heat so the redness, and radiate radiation with a wide range of wavelengths, and the wide range and intensity high relative to UV from the sun is a result of both the high temperature and the large size of the sun itselftherefore intensity relative to these rays if they reach the Earth's surface, they are likely to be fatal to all living organisms on which they live.[1]

The main factors affecting the UV radiation in the range 290 to 320 nm, which can be up to the earth's surface depends largely on the angle the sun relative to the earth's surface, in addition to the difference in the seasons, in addition to that, the increasing amount of clouds and vapors and gases in the atmosphere could play a major role in the amount of ultraviolet radiation reaching the Earth's surface[1].

It is known that Ozone formed in the stratosphere is produced by a chemical reaction photosynthesis impact UV from the sun at wavelengths far less than (242 nm), and no ozone in the stratosphere concentrations represent equilibrium dynamic between the amount of what is produced from it and how much disintegrates , as it is also known that there are changes daily and quarterly concentration of ozone in the atmosphere, and the average rate of production of gas about (400 tons) per second, has been observed that volatiles and inert chemically and in atmospheric layers that can reach the ozone layer above the surface land through any environmental activities of man.

It seemed that there was interest vehicles (halogen) containing fluorine and carbon as the photochemical reactions produce chlorine or (ions free) that interact in turn strongly with ozone, which leads to low concentration of ozone gas to low values, in addition, it was found that (oxides nitrogen) emanating from internal combustion engines can play a role in reducing the concentration of ozone gas, and this will therefore

affect the UV. (UV-B) that reaches the earth's surface, which in turn will act to cause adverse effects on the types of life on Earth.

As for the biological effects of UV rays have proven studies and measurements that have been made that the UV in solar radiation is the main reason for inflammatory skin that occur as a result of exposure to sunlight as in Figure (4), and be severe skeletal UV daily between the hours of 10 am and 2 pm and about (80%) of this dose between 9 am and 3 pm.

Fig (4), show that, dangers of human exposure to ultraviolet rays, which infect humans with cancer, such as skin cancer. If we look at the biological effects of UV, we find that in the wavelengths in the range (UV-C) of the spectrum can cause adverse effects, but they are not dangerous to the skin and eyes, while we find that the wavelengths that fall in the range (UV-B).The effects of acute and chronic UV can occur in both skin and eye as well as the acute effects of this radiation on the skin is in breach UV with short wavelengths of layers of the skin in the human body, and confined to hack in the skin layer surface of wavelengths short, and be hack deeper at longer wavelengths in the free areas of colored objects.

The amount of exposure to UV depends mainly on the composition of natural and intensity of radiation and the distance between the source and the barrier protective, nor can the naked eye to determine when the protection of these rays are required as these rays cannot be seen with the naked eye, and on the safety standards required minimum to protect the health of UV finding a property related to knowing all of the maximum and minimum level of exposure for each of the UV resulting from natural sources or industrial sources is extremely difficult due to the following factors: -

1- Change in both acute and chronic effects of UV with different wavelengths.
2- The difference is clear in the class structure of the light industrial from different sources and in particular of sunlight at different altitudes.
3- The big difference in the sensitivity of the skin to ultraviolet radiation as a result of hereditary reasons and in addition to environmental change sensitivity in the same person at different times.
4- The difficulty of distinguishing between UV doses needed to maintain good health and low-dose that can result in dangerous injuries.

On the other hand, affected some crops up where UV is not accurate studies on most plants but when he was subjected about 200 species of plants to (UV-B) affected third adversely was soybeans from more plants influence has decreased its production by 25% when increased dose (UV-B) by 25% and also note that the severity of the impact of ozone on plants related to many factors, including: moisture, air and soil, when lack of moisture in the plant will be influenced by ozone weak, but when irrigation bumper and heavy rains, the block root and germination percentage Seeds decreases, and the fluctuation of the abundance of water in the plant slows down the process of gas exchange (contraction stomata), and when, the penetration of ozone into the paper be less, and that the low intensity of sunlight raise ozone-sensitive plants.Since ozone is considered a factor Oxide optically strong and plays a contaminant additional terms that can make the process of nomination of plants of nutrients worse and it smashed the casing gummed Securities needles and water-resistant and leads ozone alone to stress diet because it hurts the process of photosynthesis.

UV influential deadly on memberships simple like algae, bacteria and protozoa "Protozoa Protozoa's" fed them fish and underlying systems marine food and also cause the destruction of fish larvae that live near the surface of the ocean, and damaged surface cells of animals upscale

.

6- The Most Complications Resulting From Erosion of the Ozone Layer

The complications resulting from the erosion of the ozone layer is to increase the temperature of the ground, which helps to increase the rate of chemical reactions of the constituent materials of the soil, especially salts and helps to speed erosion and corrosion processes and thus the loss of fertile land of vegetation and the extinction of many green areas. Them and create an atmosphere of desertification on such areas, especially dry.

We also note the contamination of surface water sources and groundwater and change in quantity and quality by changing the components and conditions leak groundwater sources of rain and snow and to increase the rate of evaporation at the expense of low water leak to the underground with the increase in the proportion of salt.We also find that the decline of vegetation and forests will increase the impact of pollution on the white lead, where you can single tree from absorbing lead emitted from (120 kg) of gasoline burned, and (square kilometers of trees) absorbs a day of (12 - 15 kg) of oxide carbon, and less number of bacteria by about 200 times in areas where plants and landscaping.

Also erosion of the ozone layer will lead to increasing the proportion of cancer patients in the areas that fall under the black holes of the ozone layer as it is in America and Australia, where infected everyone of 2100 people with cancer in those areas, as we find it to erode this layer increases the risk of using food areas that fall

under the influence of black holes to the ozone layer, such as North America, Canada, Sweden, Denmark, Norway, Russia and Australia.

We also note the emergence of the impact of the ozone layer in dry areas warm used where refrigeration technologies due to increased use of (Freon 12), which affect the ozone layer, as is the case in Yemen, which consumes annually about 332 tons of (Freon 12), although economic conditions are not mainly to be able to search for alternatives to modern techniques in the field of cooling equipment does not adversely affect the ozone [6].

7- The World Health Organization (WHO) Report

After the presentation of the above risk of exposure to harmful UV rays with a short wavelength and high energy which protect us from the ozone layer and after post medical scientists and physicists in this area has surprised the World Health Organization the following report:-

1- That exposure to ultraviolet (harmful) works to break down acid molecules as Alnyuklak (RNA, DNA) as well as the protein, the main molecules in living cells, making it the major cause of vulnerability of organisms resistant to diseases.

2- If ULTRAVIOLET severe enough it cause burns to the first or second degree can also lead to the destruction of the surface layer of the skin.

3- Revealed research studies that there is a close relationship between the decline in the concentration of ozone and skin cancer as the decreasing concentration of this gas in the layer (the stratosphere) helps access a large amount of ultraviolet (harmful) to the Earth's surface, causing many types of skin cancers , including the so-called black tumor (melanoma), which leads to death in most cases.

4- If the entire ozone layer fell by "10%" led to an increase in the incidence of skin cancer in the world by "26%".

5- In terms of ophthalmologists report she reported that the acute effects of this radiation on the eye leading to inflammation in the iris and cornea and conjunctiva in addition to cancer Cataract "opacity of the lens of the eye," which leads to blindness.

6- Hand feeding has reported the global food to offer the terrestrial environment for overdoses of ultraviolet (harmful) could lead to a lack of yields of major food crops, also permeates these rays for a long distance in the deep ocean will lead to the killing of "phytoplankton" They single-cell plants and "krill" small animals that represent serve as food for fish resources and is therefore vulnerable human to lose a major source of food.

7- Have confirmed report issued by the United States Agency for Environmental Protection (EPA) that human exposure to ultraviolet radiation (harmful) working on a weakened immune system in the human body and thus helps to ease disease viral sore hepatitis and skin infections caused by parasites also makes the body less ability to fight tumors and spread in the body without resistance.[7]

Generally, the aim of this research is study the effect of UV-RAYS on the pollution of the terrestrial environment and human health through knowledge of the properties of the atmosphere and the OZONE layer.

8- The Index of Ultraviolet Rays

According to what has been mentioned in the first part, it has been agreed upon work index divides ULTRAVIOLET (200 - 400) Nano Meter (nm) based on the wavelength and biological weapons effects as follows:-

1- Ultraviolet (UV-A) and wavelength ranges between (320 - 400 nm), a long wavelength known as black radiation.

2- X-ultraviolet (UV-B) and wavelength ranges between (280 - 320 nm), a wavelength average and known as solar radiation burner.

3- ultraviolet (UV-C), which wavelength ranges between (200 - 280 nm), a wavelength short, where radiation shorter than (290 nm), they are supposed to absorb fully in the ozone layer and the arrival of these rays to the earth works Ali break down acid molecules as Al-Nuklak (RNA, DNA) as well as the protein, the main molecules in living cells as previously mentioned.

To access the chromatic scale simplified human can understand simple reference to the staging follows chromatography:-

1- Green (1 and 2) means an ultraviolet wavelength long and there is no risk from exposure to them and are advised to wear top hats and sunglasses.

2- Yellow (3, 4 and 5) means an ultraviolet wavelength average, a medium risk and are advised to wear top hats and sunglasses and take refuge in the shade from the direct rays.

3- Bright red color (6 and 7) means an ultraviolet wavelength short and there is a risk of exposure to them at high and advised to wear hats head and sunglasses and hunker down in the shade of rays direct and prefer to avoid out of ten o'clock am to fourth in the afternoon.

4- Red dark (8, 9, 10) means an ultraviolet wavelength short higher grade and there is a risk of exposure to them by very high and advised to wear clothes protect all parts of the body from exposure to sunlight, as well as hats head and sunglasses and hunker down in the shade of rays direct and prefer to avoid out of ten o'clock in the morning and until the fourth afternoon and the abolition of the daily routines such as exercise and others.

5- Blue (11) means an ultraviolet wavelength is very short and not supposed to reach the ground and there is risk of very severe exposure to these rays are advised not to go out in the period from ten in the morning and even fourth pm and if necessary we take all safety procedures and wear Clothing protect All parts of the body and wear hats and sunglasses and take refuge in the shade from the direct rays and avoid daily routines [8].

9- Results and Discussion

- **Calculate The Amount of Exposure to UV-Rays**

In fact before describe the calculation methods of UV index at any region must be known this based factors:

1- The thickness of the ozone layer over your city (detected using satellites).
2- The cloud cover over your city (clouds block UV radiation to varying degrees).
3- The time of year (in winter, UV radiation is lower than in the summer because of the sun's angle).
4- The elevation of your city (higher elevations get more UV radiation).

According to the above four factors and by using ozone model, we can predict by the strength of incident ray with respect to the wave length, also can determine the weight of molecules in air column, the next tables will describe this method by using default values near from real, because this region is very poor in stations which measure the Ozone.

First: - The scientists calculate the energy of the photon (Strength) issued by UVB and that each item of wavelengths previous as shown in the following table (1).

Table 1 : The wavelength and Strength of UV -Rays

Wavelength	Strength
290 nm	**4**
320 nm	**26**
400 nm	**30**

Second: - The scientists calculated molecular weight (Weight) into the air column of the atmosphere because they contain these ULTRAVIOLET each item of wavelengths previous weight and hit output with intensity as shown in the following table (2).

Table 2 : The wavelength, Strength and Weight of UV -Rays

Wavelength	Strength	Weight	Result
290 nm	4	15	60
320 nm	26	5	130
400 nm	30	3	90
Total			280

Third: - Height was corrected for each region for sea level by adding (0.06) per kilometer higher than the sea level and put the same value of what is located below sea level.
Fourth: - correct amount clouds cover sky following proportions as shown in the following table (3).

Table 3 : The Ratio Percentage for Amount of Cloud Cover

Amount of Clouds	Percentage
Clear Sky	%100
Scattered	%89
Broken	%73
Overcast	%31

Fifth: - are calculated overall effect of UV by multiplying each of the correct height and clouds in the (280) and dividing by (25) and bring output to the nearest value and given the scale chromatography can see how dangerous exposure to these rays with the need to take into account the amount of Ozone during column air from the atmosphere and in any season of the year.[9]

Thecalculation methods of UV- indexat different cloud cover onMAKHWAH South West Saudi Arabia.

MAKHWAH lie in South West Saudi Arabia on longitudes (41-42) degrees East and latitudes (19-20) degrees North, it rising 400 meters (0.4) km above sea level.Now we will calculate the amount of exposure to ultraviolet rays in various cloud cover on chromatography grading.

The correction height of MAKHWAH

	Original Altitude	Correction height
	1	0.06
MAKHWAH	0.4	X

$$X = \frac{(0.4\ x\ 0.06)}{1} = 0.024$$

0.4 + 0.024 = 0.424

According to the results in tables (1, 2 and 3) and the above result for correction height, we can calculate the amount of exposure to ultraviolet rays in various cloud cover on MAKHWAHas in table (4).

Table 4 : The amount of exposure to UV in various cloud cover on MAKHWAH

Clear Sky	**%100**	**0.424 X 280 X 1 = 118.72**	$\frac{118.72}{25} = 4.7 \cong 5$
scattered	**%89**	**0.424 X 280 X 0.89 = 105.6608**	$\frac{105.6608}{25} = 4.2 \cong 4$
Broken	**%73**	**0.424 X 280 X 0.73 = 86.6656**	$\frac{86.6656}{25} = 3.5 \cong 4$
Overcast	**%31**	**0.424 X 280 X 0.31 = 36.8032**	$\frac{36.8032}{25} = 1.5 \cong 2$

Table (4) show that, the amount of exposure to ultraviolet rays in various cloud cover is Maximum values in clear sky and Minimum values in overcast cloud while in middle in case scattered and broken cloud.

According to the above result the UV-dose is deferent seasonally become in Summer higher than in Winter and become in middle in each of Spring and Autumn, so we will use Satellite data from (1996 - 2002) to describe it on MAKHWAH region as in table (5).[9]

The data used from**N**ational **A**eronautics and **S**pace **A**dministration (NASA) [10]

Table (5): The monthly mean of the amount of UV-Rays on MAKHWAH

	1996	1997	1998	1999	2000	2001	2002
Dec	4	4	3	3	3	3	3
Jan	4	4	3	3	3	3	3
Feb	4	5	4	4	4	4	4
Mar	5	5	5	5	5	4	5
Apr	6	6	5	6	5	5	6
May	6	6	6	7	6	6	7
Jun	6	7	6	7	6	6	7
Jul	6	7	7	6	6	6	7
Aug	7	7	6	5	5	5	6
Sep	6	6	5	5	5	5	5
Oct	5	4	4	4	4	4	4
Nov	4	4	4	4	4	4	4

Table (5) describe the monthly mean of the amount of UV-Rays on MAKHWAH region which measured by Dose ($\mathbf{1}\,\boldsymbol{Dose} = \mathbf{1}\,\frac{\boldsymbol{KJ}}{\boldsymbol{m^2}}$) from(1996 – 2002).

Table (6): The seasonally mean of the amount of UV-Rays on MAKHWAH

	1996	1997	1998	1999	2000	2001	2002	Total mean
Winter	4	4	3	3	3	3	3	≅ 3
Spring	6	6	5	6	5	5	6	≅ 5
Summer	7	7	7	6	6	6	7	≅ 7
Autumn	5	5	4	4	4	4	4	≅ 4

Table (6) describe the seasonally mean of the amount of UV-Rays on MAKHWAH region which measured by Dose ($\mathbf{1}\,\boldsymbol{Dose} = \mathbf{1}\,\frac{\boldsymbol{KJ}}{\boldsymbol{m^2}}$) from(1996 – 2002), it illustrated that the higher values recorded in summer season and the lower values recorded in winter, followed Spring and autumn season which consider in middle scale .

Fig (5) show that, the higher values of UV-Rays on MAKHWAH region recorded in **Summer** season if we compare with another season but in same season in years (1999,2000 and 2001) is lower than the values in another years.

Spring, comes in following ranked and consider the years (1998, 2000 and 2001) is the lowest values in this season.

Autumn, comes in the third ranked and the values of UV-Raysin years (1996 and 1997) is higher than values in another years.

Winter, comes in the last ranked and the values of UV-Rays in years (1996 and 1997) is higher than values in another years.

Finally, we can say that the higher values recorded of UV-Rays on MAKHWAH region was in years (1996 and 1997), while the lower values was in years (2000 and 2001).

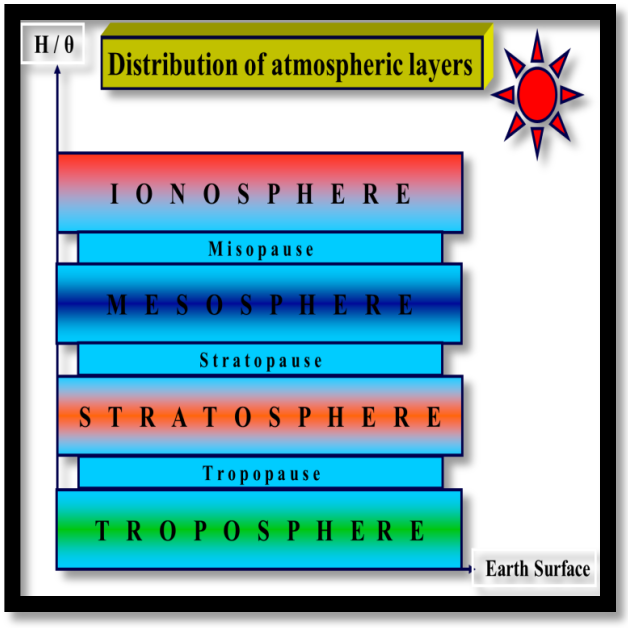

Fig 1: The distribution of atmospheric layers according to temperature

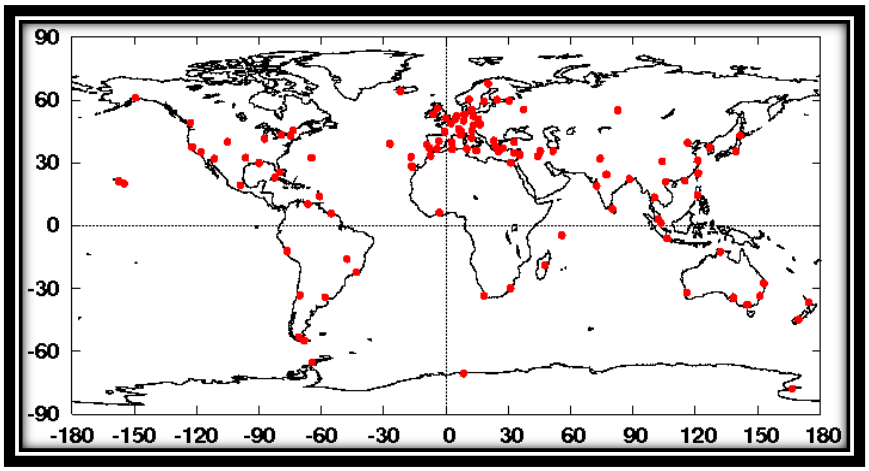

Fig 2: The distribution of Ozone stations in the World [2].

Fig 3: Avalanches at North Pole.

o

Fig 4: The Melanoma (Skin Cancer) effective with UV-B[5].

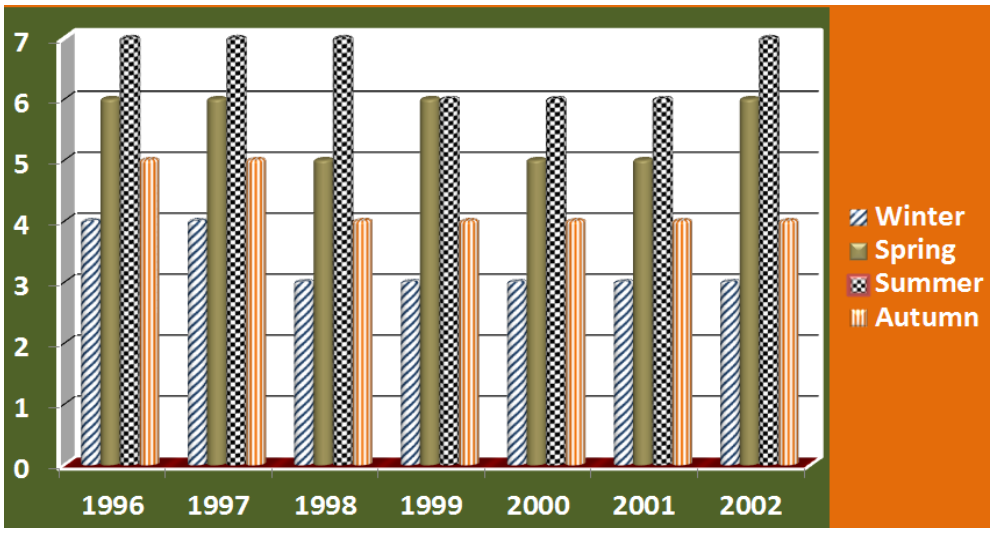

Fig 5: The seasonally mean of the amount of UV-Rays on MAKHWAH from (1996-2002)

8- CONCLUSION

Of God's mercy on slaves that ozone is concentrated in the stratosphere because it is in the lower layer (the troposphere) from the atmosphere may lead to irritation, mucous membranes and sensitivity of the eyes and respiratory tract and swellings malignant tissues in the lungs and other damage to living organisms.Ozone layer in the stratosphere serve as shield harmful UV rays His presence in this layer is useful for the protection of life and without it perhaps being human to several diseases such as skin cancer and cataracts and weakened immune systems as a result of breaking the DNA (DNA) by UV and less plant production plant as a result of exposure to different diseases.The ozone gas is considered among the endothermic gas absorbs infrared reflected from the surface of the earth and destined to outer space and thus contribute to the heating of the earth.The proportion of ozone harmful to beneficial ratio of ozone in the atmosphere depends on the balance between consuming processes (destructive)-depleting substances and those operations producing any imbalance in this will lead to serious consequences for life on Earth.

That God flesh of the dangers of exposure to UV ozone layer man must reduce the use of psychoactive substances on ozone depletion.

Man must good knowledge of the index of exposure to ultraviolet rays and how to protect himself from the dangers and lack of exposure to direct sunlight at least in times of 10 am to 04 Pm in the afternoon.The amount of exposure to ultraviolet rays in various cloud cover is Maximum values in clear sky and Minimum values in overcast

cloud while in middle in case scattered and broken cloud.The summer and spring seasons susceptible to these harmful rays of UV-Capacity while less-Capacity Price impact of this unit in winter and autumn.

In MAKHWAH Region which the correct height is 0.4 from sea level, the amount of exposure to ultraviolet rays in various cloud cover is Maximum values in clear sky which recorded 5 degree and Minimum values in overcast cloud which recorded 2 degree while in middle in case scattered and broken cloud.

That of materials used by man and work on ozone depletion (Carbon monoxide Co - Nitrogen monoxide No –ColoroFloroCarbon CFC) and must limit their use and to preserve the environment and human health and the organisms.

REFERENCES

[1] Samy A. Khalil, Astronomical Institute for Astronomical and Geophysical Research, (2009). “The atmosphere and the natural hazards of ozone depletion”.

[2] http://www.temis.nl/protocols/O3global.html .

[3] Shafiq Muhammad Yunus, Dar Al-Furqan, (1999). “Environmental pollution”

[4] Mohamed Eid Mquili, Open University of Tripoli, (1993). “Introduction to Weather and Climate”

[5] http://www.who.int/ar/ .

[6] Anwar Abdel Wahed, International House Publishing and Distribution, (1992). “protect life on earth steps to save the ozone layer”

[7] C.B. Leovy, C-R. Sun, M.H. Hitchman and E.E. Remsberg , Department of Atmospheric Sciences, University of Washington (1984). “Transport of Ozone in the Middle Stratosphere: Evidence for Planetary Wave Breaking”

[8] Xun Jiang, Steven Pawson, Charles D. Camp, J. Eric Nielsen, Run-Lie Shia, Ting Liao, Varavut Limpasuvan, Yuk L. Yung. (2008). “Interannual Variability and Trends of Extratropical Ozone”. Part I: Northern Hemisphere. Journal of the Atmospheric Sciences

[9] http://www.temis.nl/uvradiation/nrt/uvindex.php?lon=30&lat=30

[10] http://www.temis.nl/uvradiation/UVindex.html