April 72 Vol. 1 No 1

P. A. A.

News Letter

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EDITORS NOTE

Well, it finally came out! This is the first of many newsletters to come. I would like to apologize for the delay in the publication of this issue of the P.A.A. Newsletter. I would also like to extend special thanks to George Potter, Bob Fydell, and Rich Milligan for their aid and patience in preparing the newsletter. I hope that our readers enjoy the first edition. An attempt has been made to balance the content between the simple and the more advanced in hopes of captivating the interest of most of the club members ("something for everyone").

Suggestions for improvements and for articles are welcomed.

Dave Sheard

MERCURY: PLANET OF EXTREMES

By Dave Sheard

FACTS ABOUT THE PLANET

Distance From Sun: 0.387 Astronomical Units or 36.0 million miles
Period of Revolution: 88.0 days
Eccentricity: 0.208
Inclination: 7.0 degrees
Equatorial Diameter: 3,100 miles
Oblateness: 0
Mass (Earth = 1.00): 0.056
Mean Density (Water = 1.00): 5.13
Surface Gravity (Earth = 1.00): 0.360
Number of Satellites: 0
Rotation Period: 58.65 days
Inclination Of Equator To Orbit: answer not known because of lack of surface features
Albedo (percentage of light reaching the planet that is reflected. 1.00 = 100%): 0.056

MERCURY

As the title implies, Mercury is a planet of extremes. The side of the planet which faces the sun at any one time is very hot, usually 370 degrees centigrade, which is hot enough to melt lead. The other side is constantly far below zero.

The orbit of Mercury is very eccentric; sometimes it is as close as 29,000,000 miles to the sun while at other times it is as far away as 43,000,000 miles. The orbital speed of the planet is 27.2 miles per second, which is about 100,000 miles per hour. As is evident by the above facts, Mercury moves faster when it is closer to the sun.

Mercury has no real atmosphere although there are some traces of carbon dioxide (CO_2). Same scientists think that the surface is desolate, with jagged mountains, rocky plains, and lifeless deserts. Because of the differences in surface temperature the landscape must be constantly changing, rocks melting and solidifying again in a different form.

Up until now it was thought that the planet rotated once every 88 days. However, new findings from the world’s largest radio telescope, in Puerto Rico, prove that the planet rotates on its axis every 58.65 days.

Mercury is an inferior planet that is it is inside the orbit of earth. Superior planets are planets, which lie outside the orbit of the earth. The planet Venus is the only other interior planet in our solar system. In certain years the planet is seen to cross the face of the sun, this phenomenon is known as the transit of Mercury. The next transits are in 1973 and 1985.

The above facts and ideas are only some of many known about Mercury and further study on the planet can be rewarding. It is hoped that all readers will at some time probe deeper into the mystery which surrounds this planet.

REFERENCES

1. Majesty of the Heavens
2. New Handbook of the Heavens

QUASI-STELLAR RADIO SOURCES (QUASARS-QSS)

In March 1963 four exciting papers appeared in the English Journal "Nature" concerning strong cosmic radio sources.

These mysterious objects, which appear as sources of strong radio frequency radiation and optically as small star-like objects on photographs have remained a relative mystery ever since.

These compact radio sources although looking like stars, eventually came to be called "quasi—stellar sources" (meaning "star resembling"), and later shortened to "Quasars".

The quasars were interesting enough to warrant an investigation, so in 1960 the areas containing these compact radio sources were combed and in each case a star seemed to be the source. In the case of 3-c—273, the brightest of the objects, the precise position was obtained by recording the moment of blackout as the moon passed before it.

Photographs showed faint nebulousities and a tiny jet of matter emerging from it, and the optical spectra indicated red shifts corresponding to velocities of recession of well over half the speed of light. Interpreted in terms of distance these velocities indicate distances of several thousand million light years to the source. Apparently they emit energy a few hundred times as intense as ordinary galaxies in spite of their stellar appearance and small real dimensions. The sources of this enormous energy is unknown.

There are many puzzling aspects about quasars. For one their spectral lines do not match. Another is that although they show a large red shift there is no perceptible proper motion. Some authorities maintain, however, that the red shift in the spectra of quasars are not Doppler effect and that quasars are members of our galaxy instead of being remote and super luminous objects.

F.J. Hancock

The Sky for the Month: April 1972

from R.A.S.C. Observer's Handbook

1972		APRIL E.S.T.		Min. of Algol	Config.of Jupiter's Sat. 3h E.S.T.	Sun's Selen. Colong. 0h U.T.
	d	h m		h m		
Sat	1	02	Moon at apogee (252,350 mi.)	16 00	1O34d	114.37[b]
		02	Juno at Opposition			
		02	Mars 3° N. of Saturn			
Sun.	2				2O134	126.54
Mon.	3	10	Neptune 6° N. of Moon		O234*	138.71
		16	Antares 0.6° S. of Moon			
Tues.	4			12 50	3O24d	150.88
Wed.	5	19	Uranus at opposition		32O14	163.06
Thur.	6	00	Jupiter 2° N. of Moon		32104	175.24
		18 44	Mn. Last Quarter			
Fri.	7	19	Venus greatest elong. E. (46°)	9 40	3O124	187.44
Sat.	8	06	Venus 5° N. of Saturn		14O23	199.63[a]
Sun.	9				42O13	211.84
Mon.	10			6 30	41O23	224.05
Tues.	11		Mercury at descending node		4O32d	236.27
		22	Mars 7°N. of Aldebaran			
Wed.	12	11	Mercury 5° S. of Moon		432O1	248.49
		17	Mercury stationary			
Thur.	13	15 31	New Moon	3 20	4321O	260.72
Fri.	14	01	Moon at perigee (222,000 mi.)		43O12	272.95[b]
		21	Venus 9° N. of Aldebaran			
Sat.	15				41O23	285.18
Sun.	16		Venus greatest hel. lat. N.	0 10	24O13	297,40
		09	Saturn 6° S. of Moon			
		21	Venus 0.1° N. of Moon			
		23	Mars 3° S of Moon			
Mon.	17				1O43*	309.63
Tues.	18			21 00	O1324	321.85
Wed.	19				32O4*	334.06
Thur.	20	07 45	First Quarter		32104	346.27[a]
Fri.	21	21	Lyrid Meteors	17 50	3O124	358.47
Sat.	22		Mercury at Aphelion		1O324	10.67
		15	Venus 3° N. of Mars			
Sun.	23				2O134	22.86
Mon.	24	20	Jupiter stationary	14 40	1O43*	35.05
Tues.	25				4O132	47.23
Wed.	26	14	Uranus 6° N of Moon		432O*	59.41
Thur.	27			11 30	432Od	71.58
Fri.	28	05	Moon at apogee (252,550 mi.)		43O12	83.76[b]
		07	Mercury greatest elong. W. (27°)			
		07 44	Full Moon			
Sat.	29				41O2*	95.94
Sun.	30	15	Neptune 6° N. of Moon	8 10	42O13	108.11
		22	Antares 0.7° S. of Moon. Occ'n			

[a]Apr. 8, -7.83°; Apr. 20, +7.39°.
[b]Apr. 1, +6.59°; Apr. 14, -6.48°; Apr. 28, +6.57°.

SUNSPOT CYCLE

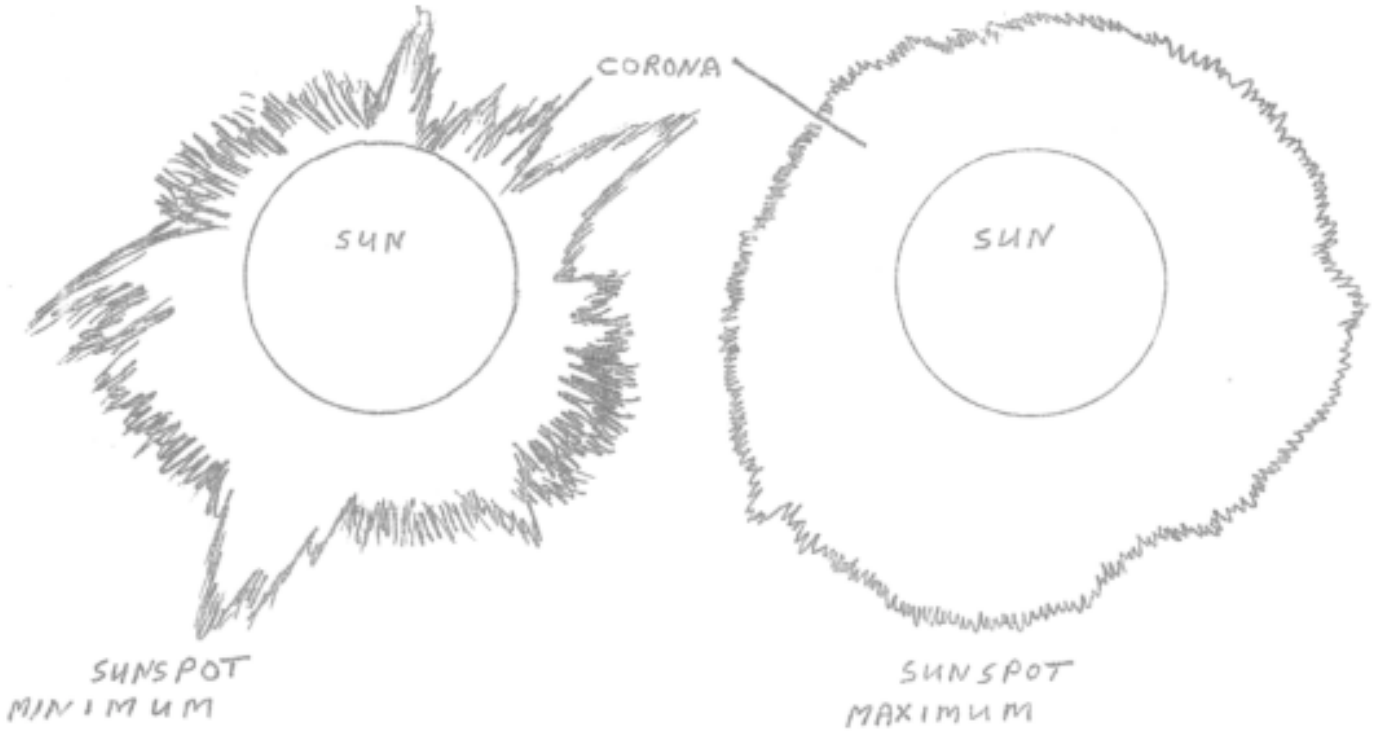
By Frank Scheibenpflug

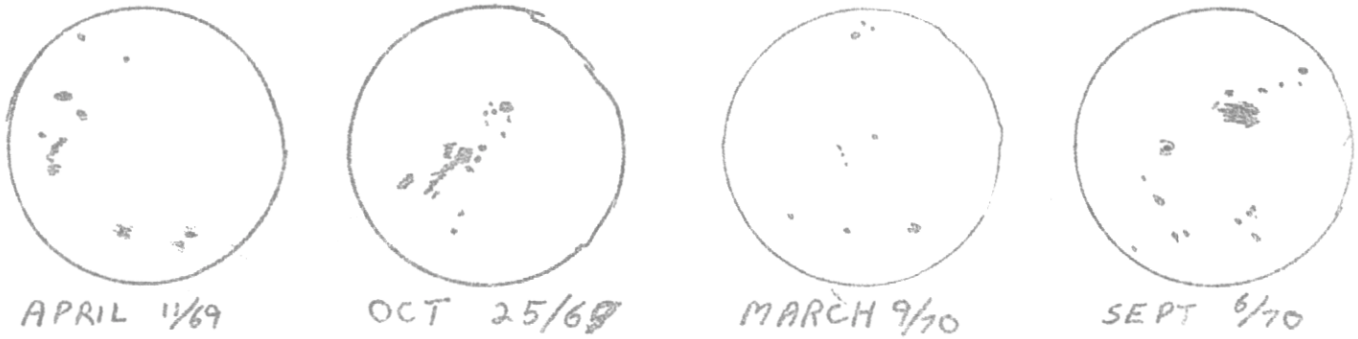
Sunspots are thought to be storms whose temperature is less than the surrounding gases. The temperature is approximately 8000°F while the sun itself is 11,000°F.

Sunspots vary in number each year but there seems to be a continuous cycle of 11.1 years; the time of maximum and minimum. This variation was discovered by a German apothecary and amateur astronomer Heinrich Schabe.

At the beginning of sunspot minimum sunspots range 30° north or south of the equator and as the cycle progresses the sunspots appear to move closer to the equator, about 15° north or south of the equator.

The amount of sunspots visible seems to influence the shape of the corona visible during an eclipse. When the cycle is during the minimum the corona seems large with flares extending from the equator with a few at the poles. During the sunspot maximum the corona is more or less shapeless and appears larger.





A COPY OF MR. SCHEIBENPFLUG'S OBSERVATIONS MAY BE OBTAINED FROM THE EDITOR