DARK SKIES for March 2019:

F/S Mar. 1/2	7:23 p.m. -	4:36 a.m.
S/S Mar. 2/3	**7:25 p.m. -**	**4:59 a.m.**
S/M Mar. 3/4	**7:26 p.m. -**	**4:57 a.m.**
M/T Mar. 4/5	**7:27 p.m. -**	**4:56 a.m.**
T/W Mar. 5/6	**7:28 p.m. -**	**4:54 a.m.**
W/T Mar. 6/7	**7:30 p.m. -**	**4:52 a.m.**
T/F Mar. 7/8	**7:31 p.m. -**	**4:51 a.m.**
F/S Mar. 8/9	8:02 p.m. -	4:49 a.m.
S/S Mar. 9/10	9:03 p.m. -	5:47 a.m.
S/M Mar. 10/11	11:06 p.m. -	5:45 a.m.
M/T Mar. 11/12	12:10 a.m. -	5:43 a.m.
T/W Mar. 12/13	1:15 a.m. -	5:42 a.m.
W/T Mar. 13/14	2:20 a.m. -	5:40 a.m.
T/F Mar. 14/15	3:23 a.m. -	5:38 a.m.
F/S Mar. 15/16	4:21 a.m. -	5:36 a.m.
S/S Mar. 16/17	5:13 a.m. -	5:34 a.m.
S/M Mar. 17/18	none	
M/T Mar. 18/19	none	
T/W Mar. 19/20	none	
W/T Mar. 20/21	none	
T/F Mar. 21/22	none	
F/S Mar. 22/23	8:50 p.m. -	9:25 p.m.
S/S Mar. 23/24	8:52 p.m. -	10:37 p.m.
S/M Mar. 24/25	8:53 p.m. -	11:46 p.m.
M/T Mar. 25/26	8:54 p.m. -	12:51 a.m.
T/W Mar. 26/27	8:56 p.m. -	1:51 a.m.
W/T Mar. 27/28	8:57 p.m. -	2:46 a.m.
T/F Mar. 28/29	8:58 p.m. -	3:33 a.m.
F/S Mar. 29/30	9:00 p.m. -	4:15 a.m.
S/S Mar. 30/31	9:01 p.m. -	4:52 a.m.
S/M Mar. 31/1	**9:03 p.m. -**	**5:05 a.m.**

Times listed are for Dodgeville, Wisconsin when
(1) Moon is below the horizon
(2) Sun is > 18° below the horizon
(astronomical twilight)

Time Travel

conducted by David Oesper

TUTOR. *Earth*, on which we live, at the distance of 95 millions of miles, performs its period in one year.[4]

Mars, at the distance of 145 millions of miles, in little less than two of our years.

Jupiter, at the distance of 494 millions of miles, in near 12 years.

Saturn, at the distance of 906 millions of miles, in about 30 years.

Georgian, discovered a few years since by Dr. Herschell, performs its period at the distance of 1812 millions of miles, in about 83 years.[5]

PUPIL. What proportion does the earth bear in magnitude to the other planets?

TUTOR. The earth is fourteen times as large as Mercury, very little larger than Venus, and three times as large as Mars. But Jupiter is more than fourteen hundred times as large as the earth; Saturn above a thousand times as large, exclusive of his ring; and Georgian eighty-two times as large.

PUPIL. Have you any thing else, Sir, to remark concerning the planets?

TUTOR. There are several other things I intend to make you acquainted with, namely, their nature, appearances, motions, &c. At present I shall only say, that Mercury and Venus are called [6]inferior planets, their orbits or paths described in going round the sun, being within that of the earth; and the other four, whose orbits are without the earth's orbit, [7]superior planets.

PUPIL. There is one thing more I wish to know, if——

TUTOR. I suppose you were going to say if not too much trouble; that is quite unnecessary, as you well know that where I see a desire to learn, teaching is to me a pleasure.—What is it?

PUPIL. That you will be so kind as to inform me what the comets are, and if they have any motion?

TUTOR. The knowledge we have of comets is very imperfect, as they afford few observations on which to ground conjecture. They are generally supposed to be planetary bodies, forming a part of our system: for, like the planets, they revolve about the sun, but in different directions, and in extremely long elliptic curves, being sometimes near the sun, at others staying far beyond the orbit of the outermost planet; whereas the orbits of the planets are nearly circular. The period of one, which appeared in 1680, is computed to be 575 years.

4. The motion of the earth in its orbit is at the rate of 68 thousand miles an hour.

5. As the distances of the planets, when marked in miles, are a burthen to the memory, astronomers often express their mean distances in a shorter way, by supposing the distance of the earth from the sun to be divided into ten parts. Mercury may then be estimated at four of such parts from the sun, Venus at seven, the Earth at ten, Mars at fifteen, Jupiter at fifty-two such parts, Saturn at ninety-five, and Georgian 190 parts.

   These are calculated by multiplying the respective distances of the planets by 10, and dividing by 95, the mean distance of the earth from the sun; and may be set off by any scale of equal parts.

6. Perhaps with more propriety *interior* or *inward.*

7. *Exterior* or *outward.*

The Study of Astronomy, by John Stedman (1796)

To be continued next month...