

## DARK SKIES for March 2020:

S/M Mar.	1/2	12:50 a.m.	-	4:59 a.m.
M/T Mar.	2/3	1:53 a.m.	-	4:57 a.m.
T/W Mar.	3/4	2:55 a.m.	-	4:56 a.m.
W/T Mar.	4/5	3:53 a.m.	-	4:54 a.m.
T/F Mar.	5/6	4:45 a.m.	-	4:52 a.m.
F/S Mar.	6/7	none		
S/S Mar.	7/8	none		
S/M Mar.	8/9	none		
M/T Mar.	9/10	none		
T/W Mar.	10/11	none		
W/T Mar.	11/12	8:37 p.m.	-	9:45 p.m.
T/F Mar.	12/13	8:38 p.m.	-	11:01 p.m.
F/S Mar.	13/14	8:40 p.m.	-	12:15 a.m.
S/S Mar.	14/15	8:41 p.m.	-	1:27 a.m.
S/M Mar.	15/16	8:42 p.m.	-	2:33 a.m.
M/T Mar.	16/17	8:44 p.m.	-	3:33 a.m.
T/W Mar.	17/18	8:45 p.m.	-	4:24 a.m.
W/T Mar.	18/19	8:46 p.m.	-	5:08 a.m.
<b>T/F Mar.</b>	<b>19/20</b>	<b>8:48 p.m.</b>	-	<b>5:27 a.m.</b>
<b>F/S Mar.</b>	<b>20/21</b>	<b>8:49 p.m.</b>	-	<b>5:25 a.m.</b>
<b>S/S Mar.</b>	<b>21/22</b>	<b>8:50 p.m.</b>	-	<b>5:23 a.m.</b>
<b>S/M Mar.</b>	<b>22/23</b>	<b>8:52 p.m.</b>	-	<b>5:21 a.m.</b>
<b>M/T Mar.</b>	<b>23/24</b>	<b>8:53 p.m.</b>	-	<b>5:19 a.m.</b>
<b>T/W Mar.</b>	<b>24/25</b>	<b>8:54 p.m.</b>	-	<b>5:17 a.m.</b>
<b>W/T Mar.</b>	<b>25/26</b>	<b>8:56 p.m.</b>	-	<b>5:15 a.m.</b>
T/F Mar.	26/27	9:39 p.m.	-	5:13 a.m.
F/S Mar.	27/28	10:40 p.m.	-	5:11 a.m.
S/S Mar.	28/29	11:42 p.m.	-	5:09 a.m.
S/M Mar.	29/30	12:44 a.m.	-	5:07 a.m.
M/T Mar.	30/31	1:45 a.m.	-	5:05 a.m.
T/W Mar.	31/1	2:43 a.m.	-	5:03 a.m.

Times listed are for Dodgeville, Wisconsin when

- (1) Moon is below the horizon
- (2) Sun is > 18° below the horizon  
(astronomical twilight)

Please minimize your use of outdoor lighting during these times to give everyone the best possible view of the night sky.

## Time Travel

conducted by David Oesper

**TUTOR.** Yes, it is called the *line* of the nodes; and the points EG the *nodes* of the planet: the latter is called the ascending node, because, when the planet is in G, it is ascending or rising above the orbit of the earth; or, which is the same thing, above the ecliptic: and when in E, it is descending or sinking below it, whence *it* is called the descending node. But you must remember that the orbits of all the planets do not cross or intersect the ecliptic in the same points; but that their nodes or intersections are at different parts of it.

**PUPIL.** How can the orbit of the earth and the ecliptic be the same?

**TUTOR.** They are very different; but being in the same plane,

if the orbit of any planet inclines to one it must incline equally to the other.

**PUPIL.** You will, I fear, Sir, think me very stupid: but I must beg of you to inform me what you mean by a plane?

**TUTOR.** Any flat surface is a plane. You may therefore suppose the edge of a round tea-table to represent the ecliptic, and a circle within it, drawn from the center of the table, the orbit of the earth: will they not be both in the same plane?

**PUPIL.** Certainly.

**TUTOR.** You must not imagine, when I am speaking to you of the plane of the ecliptic, or plane of the earth's orbit, that it is a visible flat surface, or, in speaking of the orbits of the planets, I mean solid rings.—No. The planets perform their revolutions with the utmost regularity, in unbounded space; and, like a bird thro' the air, leave no track behind them.

**PUPIL.** How then are they retained in their orbits?

**TUTOR.** The question, I confess, is natural, and is what I expected; but I must of necessity postpone it to another opportunity; and shall now fulfil the promise I made of shewing you in what manner the inferior planets may be seen when in their inferior conjunctions. Cast your eye again on the little design I gave you, and consider, if Venus were in her ascending node at G, when the earth is at *b*; or, in her descending node, at E, when the earth is at *a*, what the effect would be.

**PUPIL.** She would be in a line with the sun.

**TUTOR.** And, on the sun's disc, she would appear a dark round spot, passing over it. These appearances, which are called transits, happen very seldom: because she is very seldom in or near her nodes at her inferior conjunctions. There was one in June 1761, one in June 1769; and the next will be in the year 1874. And as Mercury is seen in the same manner, it is a proof that their orbits must be within that of the earth.

**PUPIL.** I thank you, Sir, and shall be obliged to you to inform me how many constellations the earth passes over in every revolution?

**TUTOR.** Twelve, which correspond with the months of the year, and are called the twelve signs of the zodiac.

**PUPIL.** What is the zodiac?

The Study of Astronomy, by John Stedman (1796)

*To be continued next month...*