

## DARK SKIES for June 2018:

F/S	June	1/2	10:44	p.m.	-	11:10	p.m.
S/S	June	2/3	10:45	p.m.	-	11:52	p.m.
S/M	June	3/4	10:47	p.m.	-	12:29	a.m.
M/T	June	4/5	10:48	p.m.	-	1:02	a.m.
T/W	June	5/6	10:49	p.m.	-	1:32	a.m.
W/T	June	6/7	10:50	p.m.	-	2:00	a.m.
T/F	June	7/8	10:52	p.m.	-	2:28	a.m.
F/S	June	8/9	10:53	p.m.	-	2:56	a.m.
<b>S/S</b>	<b>June</b>	<b>9/10</b>	<b>10:54</b>	<b>p.m.</b>	-	<b>3:05</b>	<b>a.m.</b>
<b>S/M</b>	<b>June</b>	<b>10/11</b>	<b>10:55</b>	<b>p.m.</b>	-	<b>3:04</b>	<b>a.m.</b>
<b>M/T</b>	<b>June</b>	<b>11/12</b>	<b>10:55</b>	<b>p.m.</b>	-	<b>3:04</b>	<b>a.m.</b>
<b>T/W</b>	<b>June</b>	<b>12/13</b>	<b>10:56</b>	<b>p.m.</b>	-	<b>3:03</b>	<b>a.m.</b>
<b>W/T</b>	<b>June</b>	<b>13/14</b>	<b>10:57</b>	<b>p.m.</b>	-	<b>3:03</b>	<b>a.m.</b>
<b>T/F</b>	<b>June</b>	<b>14/15</b>	<b>10:58</b>	<b>p.m.</b>	-	<b>3:03</b>	<b>a.m.</b>
<b>F/S</b>	<b>June</b>	<b>15/16</b>	<b>10:58</b>	<b>p.m.</b>	-	<b>3:03</b>	<b>a.m.</b>
S/S	June	16/17	11:28	p.m.	-	3:02	a.m.
S/M	June	17/18	12:10	a.m.	-	3:02	a.m.
M/T	June	18/19	12:46	a.m.	-	3:02	a.m.
T/W	June	19/20	1:18	a.m.	-	3:02	a.m.
W/T	June	20/21	1:48	a.m.	-	3:03	a.m.
T/F	June	21/22	2:16	a.m.	-	3:03	a.m.
F/S	June	22/23	2:45	a.m.	-	3:03	a.m.
S/S	June	23/24	none				
S/M	June	24/25	none				
M/T	June	25/26	none				
T/W	June	26/27	none				
W/T	June	27/28	none				
T/F	June	28/29	none				
F/S	June	29/30	none				
S/S	June	30/1	none				

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.

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## Time Travel

conducted by David Oesper

Among the numerous comets observed, there are very few that are visible to the naked eye, and a still less number which strike ordinary observers by their large dimensions and the brightness of their light. It is these, nevertheless, which possess the greatest interest, by reason of the peculiar phenomena presented by their tails and nuclei—phenomena which throw great light on their physical constitution.

Among the most remarkable comets of by-gone centuries must be mentioned the large comet of 1500, which the Italians surnamed *Il Signor Astone*; the comet of Charles the Fifth, of 1556, which, according to astronomical calculations having already appeared in 1264, ought to have made its reappearance about 1860, and has not been again seen; that of 1686, the bright nucleus of which shone as a star of the first magnitude; the comet of 1744, with several

tails; and that of 1769.

The portion of the nineteenth century already elapsed has been rich in brilliant comets, visible to the naked eye. We here reproduce some of the most remarkable; first, the large comet of 1811, the appearance of which made an extraordinary sensation. It will not again return for thirty centuries. The head measured 112,000 miles in diameter, whilst the diameter of the luminous nucleus was little more than 400 miles. The tail, of prodigious dimensions, attained a length of 112,000,000 miles.

The great comet of 1843 was one of the most brilliant ever observed. Not only the nucleus, but a portion of the tail, was visible in full day. The tail was besides very remarkable for its length, and still more for the uniformity of its breadth. This is, of all known comets, that which is the nearest to the Sun. At the time of its shortest distance from the centre of our system, the nucleus was not more than 470,000 miles from the centre of the Sun, and consequently only 30,000 miles from its surface.

In these latter years three comets, visible to the naked eye, have been the object of the most interesting observations. The most brilliant of all, Donati's comet, made its appearance in 1858. Perceived at Florence, for the first time on the 2nd of June, by the astronomer whose name it bears, it became visible to the naked eye towards the first days of September, and was soon distinguished among the northern constellations by the brightness of its brilliant nucleus, and the magnificent development of its tail.

In 1861 and in 1862 two other comets were also visible, although inferior in brilliancy to that of 1858.

The problems connected with the study of the physical constitution of comets are numerous, and of extreme difficulty. It may be asked, in the first place, What is the nature of the matter which composes them? or whether this matter be entirely gaseous? or, again, if the nuclei enclose liquid or even solid particles, and if so what is their bulk and their density; if the tail is of the same nature as the head or nucleus; or by virtue of what influence these singular appendages are formed, which, almost unnoticeable when the comet is far from the Sun, are developed as it approaches it, to diminish, and finally disappear again in the more distant half of its orbit?

Next comes the question of the light which renders the comets visible in space. Do comets shine with their own light? do they borrow their light from the Sun? or do they send us rays proceeding from both these sources? Again, can anything plausible be conjectured on their temperature, or on the changes induced upon this element by the prodigious variations of distance which are the consequence of the extreme elongations of their orbits?

*The Heavens: An Illustrated Handbook of Popular Astronomy* (1872) by Amedée Guillemin (1826-1893)

Edited by J. Norman Lockyer (1836-1920)  
4th Edition revised by Richard Proctor (1837-1888)