

DARK SKIES for June 2017:

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|------------|-------------|--------------|-------------------|---|------------------|
| T/F | June | 1/2 | 2:06 a.m. | - | 3:11 a.m. |
| F/S | June | 2/3 | 2:35 a.m. | - | 3:10 a.m. |
| S/S | June | 3/4 | 3:04 a.m. | - | 3:09 a.m. |
| S/M | June | 4/5 | none | | |
| M/T | June | 5/6 | none | | |
| T/W | June | 6/7 | none | | |
| W/T | June | 7/8 | none | | |
| T/F | June | 8/9 | none | | |
| F/S | June | 9/10 | none | | |
| S/S | June | 10/11 | none | | |
| S/M | June | 11/12 | none | | |
| M/T | June | 12/13 | 10:56 p.m. | - | 10:59 p.m. |
| T/W | June | 13/14 | 10:57 p.m. | - | 11:37 p.m. |
| W/T | June | 14/15 | 10:58 p.m. | - | 12:12 a.m. |
| T/F | June | 15/16 | 10:58 p.m. | - | 12:45 a.m. |
| F/S | June | 16/17 | 10:59 p.m. | - | 1:16 a.m. |
| S/S | June | 17/18 | 11:00 p.m. | - | 1:47 a.m. |
| S/M | June | 18/19 | 11:00 p.m. | - | 2:19 a.m. |
| M/T | June | 19/20 | 11:00 p.m. | - | 2:54 a.m. |
| T/W | June | 20/21 | 11:01 p.m. | - | 3:03 a.m. |
| W/T | June | 21/22 | 11:01 p.m. | - | 3:03 a.m. |
| T/F | June | 22/23 | 11:01 p.m. | - | 3:03 a.m. |
| F/S | June | 23/24 | 11:01 p.m. | - | 3:04 a.m. |
| S/S | June | 24/25 | 11:01 p.m. | - | 3:04 a.m. |
| S/M | June | 25/26 | 11:01 p.m. | - | 3:05 a.m. |
| M/T | June | 26/27 | 11:01 p.m. | - | 3:05 a.m. |
| T/W | June | 27/28 | 11:34 p.m. | - | 3:06 a.m. |
| W/T | June | 28/29 | 12:08 a.m. | - | 3:06 a.m. |
| T/F | June | 29/30 | 12:38 a.m. | - | 3:07 a.m. |
| F/S | June | 30/1 | 1:07 a.m. | - | 3:08 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

THE BEGINNINGS OF AMERICAN ASTRONOMY

(continued)

The exploring expedition of Wilkes required corresponding observations to be made in America, and during the period 1838-'42 William Bond, at Dorchester, and Lieutenant Gilliss, at Washington, maintained such a series with infinite assiduity and with success. The results of Gilliss's astronomical expedition to the southern hemisphere (Chile, 1849-'52) were most creditable to him and to the navy, though his immediate object—the determination of the solar parallax—was not attained.

The Coast Survey began its work in 1817 under Hassler, a professor from West Point, who impressed upon the establishment a thoroughly scientific direction. Bache, his successor (a grandson of Benjamin Franklin), was a graduate of West Point in the class of 1825, and took charge

of the Survey in 1843. He is the true father of the institution, and gave it the practical efficiency and high standard which characterized its work. He called around him the flower of the army and navy, and was ably seconded by the permanent corps of civilian assistants—Walker, Saxton, Gould, Dean, Blunt, Pourtales, Boutelle, Hilgard, Schott, Goodfellow, Cutts, Davidson, and others.

Silliman's (and Dana's) "American Journal of Science" had been founded at New Haven in 1818, and served as a medium of communication among scientific men. A great step forward was made in the establishment of the "Astronomical Journal" by Dr. Gould on his return from Europe at the close of 1849.³ Silliman's "Journal" was chiefly concerned with the non-mathematical sciences, though it has always contained valuable papers on mathematics, astronomy, and physics, especially from the observers of Yale College—Olmsted, Herrick, Bradley, Twining, Norton, Newton, Lyman, and others. In Mason, who died in 1840 at the age of twenty-one, the country lost a practical astronomer of the highest promise.⁴ Gould's "Journal" was an organ devoted to a special science. It not only gave a convenient means of prompt publication, but it immediately quickened research and helped to enforce standards already established and to form new ones. The "Astronomical Notices" of Brünnow (1858-'62) might have been an exceedingly useful journal with an editor who was willing to give more attention to details, but, in spite of Brünnow's charming personality and great ability, it had comparatively little influence on the progress of the science.

The translation of the "Mécanique Céleste" of Laplace by Nathaniel Bowditch, the supercargo of a Boston ship (1815-'17), marks the beginning of an independent mathematical school in America. The first volume of the translation appeared in 1829; at that time there were not more than two or three persons in the country who could read it critically. The works of the great mathematicians and astronomers of France and Germany—Laplace, Lagrange, Legendre, Olbers, Gauss, W. Struve, Bessel—were almost entirely unknown.

Bowditch's translation of the "Mécanique Céleste," and, still more, his extended commentary, brought this monumental work to the attention of students and within their grasp. His "Practical Navigator"⁵ contained the latest and best methods for determining the position of a ship at sea, expressed in simple rules.

³ The "Astronomische Nachrichten" had been founded in Altona, by Schumacher, in 1821.

⁴ See the "International Review," vol. x, p. 585.

⁵ First edition, 1802. Sumner's method in navigation (1843)—a very original and valuable contribution from a Boston sea-captain—and Maury's "Wind and Current Charts," begun in 1844, are two other notable contributions from a young country to an art as old as commerce.