

DARK SKIES for September 2021:

W/T Sep.	1/2	9:16 p.m.	-	1:23 a.m.
T/F Sep.	2/3	9:14 p.m.	-	2:21 a.m.
F/S Sep.	3/4	9:12 p.m.	-	3:26 a.m.
S/S Sep.	4/5	9:10 p.m.	-	4:35 a.m.
S/M Sep.	5/6	9:08 p.m.	-	4:50 a.m.
M/T Sep.	6/7	9:06 p.m.	-	4:52 a.m.
T/W Sep.	7/8	9:04 p.m.	-	4:53 a.m.
W/T Sep.	8/9	9:01 p.m.	-	4:55 a.m.
T/F Sep.	9/10	9:01 p.m.	-	4:56 a.m.
F/S Sep.	10/11	9:28 p.m.	-	4:57 a.m.
S/S Sep.	11/12	10:00 p.m.	-	4:59 a.m.
S/M Sep.	12/13	10:37 p.m.	-	5:00 a.m.
M/T Sep.	13/14	11:24 p.m.	-	5:01 a.m.
T/W Sep.	14/15	12:20 a.m.	-	5:03 a.m.
W/T Sep.	15/16	1:25 a.m.	-	5:04 a.m.
T/F Sep.	16/17	2:35 a.m.	-	5:05 a.m.
F/S Sep.	17/18	3:47 a.m.	-	5:06 a.m.
S/S Sep.	18/19	4:58 a.m.	-	5:08 a.m.
S/M Sep.	19/20	none		
M/T Sep.	20/21	none		
T/W Sep.	21/22	none		
W/T Sep.	22/23	none		
T/F Sep.	23/24	none		
F/S Sep.	24/25	8:29 p.m.	-	8:49 p.m.
S/S Sep.	25/26	8:27 p.m.	-	9:16 p.m.
S/M Sep.	26/27	8:25 p.m.	-	9:48 p.m.
M/T Sep.	27/28	8:24 p.m.	-	10:27 p.m.
T/W Sep.	28/29	8:22 p.m.	-	11:12 p.m.
W/T Sep.	29/30	8:20 p.m.	-	12:06 a.m.
T/F Sep.	30/1	8:18 p.m.	-	1:07 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 DISAPPEARANCE OF DARKNESS

NORMAN SPERLING
Chabot Observatory
Oakland, CA U.S.A.

Continued from last month...

FAST OPTICS ACCENT LIGHT POLLUTION

An often-overlooked element in the rising clamor has been the change in focal ratio of both professional and amateur telescopes. Most 19th Century telescopes were f/15 to f/20 refractors. Such instruments excel for positional astronomy, as well as with high-surface-brightness

objects like planets and double stars – and are relatively unbothered by diffuse skyglow because they operate at high magnifications with small fields of view. That is why most remain in the cities and campuses where they were first set up, and why so few have been moved to remote mountaintops.

Since World War II, however, the overwhelming majority of professional and amateur observing has been accomplished with reflectors. It is relatively easy to make reflectors optically fast (a difficult problem for refractors), and preferable for cutting exposure time, and lowering the cost of mounting and housing. Fast optics concentrate diffuse light, so they excel for deep-sky observing of low-surface-brightness nebulae, clusters, and galaxies.

With their large, fast reflectors, amateurs have waxed enthusiastic for deep-sky observing. Several people have called this a result of the aperture explosion, which is perhaps spurred by economics as well as technology. But the faster focal ratios have been at least as much a factor as the wider apertures. And it is just those fast focal ratios that yield the wide fields of view and low magnifications that accent light pollution. Thus, when amateurs poured huge sums into huge telescopes to see huge distances, they found light pollution glaring back at them, preventing them from enjoying the view they had invested so much to see.

POLITICAL ACTIVISM

In the United States in the 1960s and 70s, light pollution increased precipitously with population, more brightly-lit cities, and suburban sprawl; amateur focal ratios sped up greatly, amateur apertures exploded enormously – and political activism spread from the Civil Rights movement to opposing the Viet Nam war and popular causes in general. This national mood gave American professional and amateur astronomers the idea to become activist – actually fighting light pollution, instead of merely running away from it.

The struggle in the United States, Britain, and Canada is largely political. Mostly through amateur astronomy clubs, American and British hobbyists have repeatedly challenged offensive lighting, and have won several notable battles.

The first major salvo came from Tucson-area professional observatories in December 1971. Subtitled “A Guide for Businessmen and the General Public,” it described the problem and the ordinance they proposed to cope with it. The ordinance passed, and Southern Arizona astronomers have been leaders in the struggle ever since. They continue issuing assorted publications, monitor Arizona’s slowed-but-still-growing light pollution, and undertake such other strategies as organizing IAU Colloquium 112 and the International Dark-Sky Association.

Light Pollution, Radio Interference, and Space Debris, ASP Conference Series, Vol. 17, IAU Colloquium 112, 1991, D.L. Crawford, Ed., p. 101.

To be continued next month...