

Why stars twinkle

by James Stokley

Sirius is the brightest star that we can see, except the sun: It is in Canis Major low in the southwest. It is nearly six times as bright as Saturn, which appears in the constellation of Taurus. Saturn is the only planet visible in the March evening sky.

As you watch Sirius you will often notice that it changes rapidly in brightness and even changes color. This "twinkling" has nothing to do with the star itself but is due to our atmosphere, through which its light must pass. The lower it appears in the sky the more pronounced is the effect. Then the light must pass a greater length through the air than when the star is higher in the sky. Sirius twinkles most noticeably because it is the brightest star.

Two factors cause twinkling. Our atmosphere is rarely steady; generally it contains regions of different densities, moved around by the winds. Such an air mass may act as a lens, bending the star's light and concentrating it at a particular place. As it moves along the point where you stand will at one moment receive this concentrated beam, making the star appear brighter. A moment later it has moved on and the star appears to be dimmer than average.

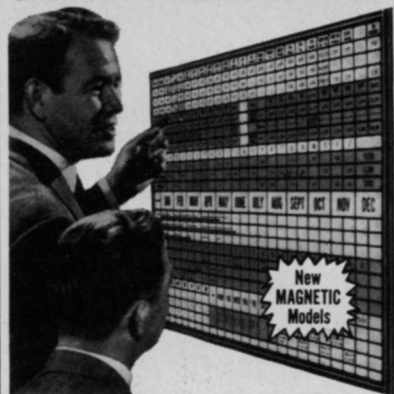
Such bending, or "refraction," is less

for red light than for blue. Thus different colors are concentrated at different places, which accounts partly for the color change in the twinkling star.

Optical interference also causes twinkling, for light consists of waves. Red light has about 40,000 waves per inch and violet light about 70,000. The other colors of the spectrum—orange, yellow, green and blue—have wavelengths between these values.

March evenings are filled with many first-magnitude stars. They can all be found on the accompanying maps, which show the sky as it looks about 10 p.m., your own kind of standard time, on March 1, 9 p.m. on the 15th and 8 p.m. on the 31st. □

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CELESTIAL TIMETABLE		
March	EST	
1	1:00 pm	Moon passes north of Jupiter
4	7:07 pm	New moon
6	12:20 am	Algol (variable star in Perseus) at minimum brightness
8	9:10 pm	Algol at minimum
10	3:00 am	Moon nearest, distance 229,700 miles
11	5:00 am	Moon passes north of Saturn
13	4:26 pm	Moon in first quarter
	3:00 pm	Mercury between earth and sun
18	6:33 pm	Full moon
20	1:13 pm	Beginning of spring
25	4:00 am	Moon farthest, distance 251,300 miles
26	6:46 pm	Moon in last quarter
28	10:50 pm	Algol at minimum
	11:00 pm	Moon passes north of Mars
29	8:00 am	Moon passes north of Jupiter
31	7:40 pm	Algol at minimum

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