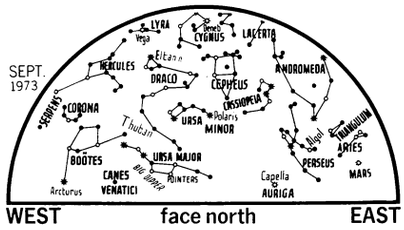
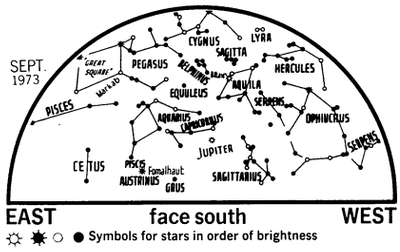
Dragon visible in September

by James Stokley





☼ ✸ ○ ● Symbols for stars in order of brightness

During September evenings Draco, the dragon, can be seen as it winds its way down the northwest sky. Four stars form a quadrilateral which marks its head. Eltanin, the star at the top, is the brightest in the constellation.

Astronomers classify stars by brightness according to their "magnitude." Most bright stars are rated first magnitude and those somewhat fainter as second. But a few stars are even brighter than first and these are placed in zero magnitude. Those still brighter are given minus numbers. The brightness ratio between magnitudes is about 2.5. So an average second-magnitude star is 2.5 times as bright as one of the third. A first-magnitude star is 2.5 times as bright as one of the second.

Under the most favorable conditions on a dark, clear night, you can see stars as faint as the sixth magnitude. Near a large city, however, it is rare to see them fainter than about the fourth, so this is the faintest magnitude that is ordinarily shown on our maps.

To classify stars with more precision, astronomers use decimals. Vega's magnitude is 0.1, Capella's 0.2 and Deneb's 1.3. The brightest star, Sirius, which is prominent on winter evenings and is now visible in the southeast in the early morning, has a magnitude of minus 1.6. As for the planets, the magnitude of Venus is now minus 3.6, Jupiter minus 2.2 and Mars minus 1.6. The division between zero and first is 0.5, between first and second 1.5 and between second and third 2.5. Eltanin, with 2.4, thus barely qualifies as second magnitude.

The third star from the end of the dragon's tail is Thuban, with 3.6. This makes it a bright fourth-magnitude star. But even though it is not very conspicuous, it has one distinction: About 3000 B.C. it was the polestar. Since then it has been displaced from this important position by a slow movement in the skies known as precession of the equinoxes.

The point in the northern sky directly over the North Pole, toward which the earth's axis is pointed, is called the North Celestial Pole (NCP). The star in Ursa Minor that we call Polaris now happens to be near the NCP so it is the polestar. But the axis wobbles and the NCP moves around in a circle once in about 26,000 years. In A.D. 14,000 it will be near Vega, which will then be the polestar.

The accompanying maps show the sky as it looks about 11 p.m., local daylight saving time on Sept. 1; 10 on the 15th and 9 on the 30th. □

CELESTIAL TIMETABLE

Sept.	EDT	
4	11:22 am	Moon in first quarter
5	11:00 pm	Moon farthest, distance 251,200 miles
8	8:00 pm	Moon passes north of Jupiter
12	11:16 am	Full moon (Harvest Moon: rises for several nights at nearly same time)
16	7:00 am	Moon passes north of Mars
17	12:40 am	Algol (variable star in Perseus) at minimum brightness
19	12:11 pm	Moon in last quarter
	9:30 pm	Algol at minimum
21	1:00 am	Moon passes north of Saturn
	6:00 pm	Moon nearest, distance 229,700 miles
23	12:21 am	Sun over equator, autumn begins in Northern Hemisphere
26	9:54 am	New moon
29	12:00 pm	Moon passes south of Venus