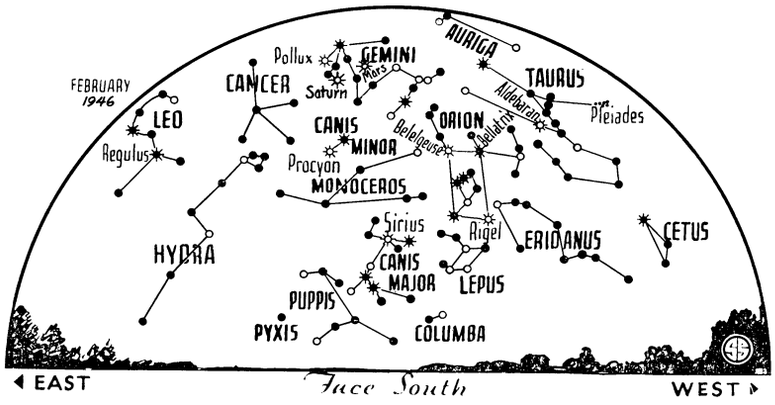

☼ ✷ ○ • SYMBOLS FOR STARS IN ORDER OF BRIGHTNESS

a photograph at night, with the camera pointed to the northern sky, and giving an exposure of several hours.

If a person were to stand at the north pole of the earth, the north celestial pole, of course, would be directly overhead. Traveling southward (which is the only way one can travel from the north pole!) the celestial pole descends, until at the equator it stands on the horizon. Thus, the height of the north celestial pole depends on the latitude of the observer. At the equator its altitude is zero degrees, and this is the latitude of the equator. In the United States, approximately 40 degrees latitude, the celestial pole is 40 degrees above the northern horizon.

Since the stars turn in circles about the celestial pole this means that for us any star or other object, such as a comet, that is within 40 degrees of the pole will never get below the horizon. In other words, for any place on the earth, in the northern hemisphere, there is a circular area in the northern sky, of radius equal to the latitude, in which the stars never set. At the north pole of the earth, where the latitude is 90 degrees, this includes the entire sky. There no star ever rises or sets. At the equator, on the other hand, every star rises and sets.

For us, the pole star and the constellation of Ursa Minor, of which it is part; Ursa Major, the great bear, which contains the Great Dipper; Cassiopeia, the queen; Cepheus, the king and Draco, the dragon, are all circumpolar constellations—ones which never descend from the sky. Stars farther south do rise and set, and the farther south they are the shorter is the time in which they are above the southern horizon. And finally, around the south pole of the sky, which is as far below the southern horizon as the north celestial pole is above it, there is another circle of stars which never rise. Among these are the constellations of Crux, the southern cross; Centaurus, the centaur, containing the nearest star, alpha Centauri; and much of Argo, the ship, which is the largest constellation in the sky.

Argo is so big, in fact, that it is subdivided into four parts. These are Puppis, the stern; Vela, the sails; Carina, the keel; and Pyxis, the compass. The brightest star in the whole group of figures is Canopus, part of Carina, which is far south and never rises for most of the United States. All of Pyxis comes above the horizon for latitude 40 degrees north, but only one star is bright enough to be indicated on these maps. This is alpha Pyxidis, of the fourth magnitude. Next to it is Puppis, of which a number of stars are shown, and which extends up alongside of Canis Major. This time of year is the best chance to see this group, for now it is in the evening sky. Part of Vela, just below Pyxis, gets above our horizon, but not far enough to be seen easily.

Celestial Time Table for February

Feb.	EST	
1	9:00 a. m.	Venus in line with sun on farther side
	9:56 a. m.	Moon passes Mercury
	10:38 p. m.	Moon passes Venus
	11:43 p. m.	New moon
8	11:28 p. m.	Moon in first quarter
9	5:00 a. m.	Moon nearest—distance 230,080 miles
10	9:00 p. m.	Mercury in line with sun on far side
11	3:00 p. m.	Jupiter starts westerly motion
12	9:24 p. m.	Moon passes Mars
13	4:20 a. m.	Moon passes Saturn
15	11:28 p. m.	Full moon
20	3:16 p. m.	Moon passes Jupiter
21	10:00 p. m.	Mars starts easterly motion
22	11:00 p. m.	Moon farthest—distance 251,214 miles
23	9:36 p. m.	Moon in last quarter

Subtract one hour for CST, two hours for MST, and three for PST.

CHEMISTRY

New Glasses Contain Little or No Silica

➤ NEW KINDS of glass made without the use of the ordinary glass sands employed for centuries, may become increasingly important as further developed particularly for service in optics, photography, enamels, glasses transparent to ultraviolet rays, and in special colored glasses.

These new glasses contain little or no silica, the substance long regarded as essential in glass-making, but are made with the use of phosphates, borates or fluorides, according to Dr. Frank L. Jones of Bausch and Lomb Optical Company, who discussed non-silica glasses at a section meeting of the American Chemical Society in Terre Haute, Ind.

Phosphate, borate and fluoride glasses, he says, resemble silicate glasses in general principles of chemical constitution, but differ from them and from one another in important chemical and physical properties. The non-silica glasses have already proven their value in the photographic field. For general use in the field of optical instruments, he states, it is likely that the glasses intermediate between the older silica glasses and the new non-silica glasses will be especially valuable.

Science News Letter, January 26, 1946

HOME ECONOMICS

Nuts Easily Cracked When Soaked in Salt Water

➤ NUT shells, particularly those of pecans, become soft and easy to crack when soaked in salt water for a few hours. The nut meats can then be easily removed whole, agriculture extension agents in Mississippi have found.

Science News Letter, January 26, 1946