



\* \* o • SYMBOLS FOR STARS IN ORDER OF BRIGHTNESS

Taurus, the bull, the group in which Saturn and Mars appear. Toward the southeast is Canis Minor, the lesser dog, with Procyon; while high in the east are Gemini, and Castor. Low in the east just below Jupiter, is Regulus, in Leo, the lion.

**Celestial Time Table for January**

Jan.	EWT	
2	4:04 p. m.	Moon in first quarter.
3	12:54 a. m.	Algol at minimum.
4	2:00 p. m.	Earth nearest sun; distance 91,440,000 miles.

5	9:43 p. m.	Algol at minimum.
6	5:22 p. m.	Moon passes Mars.
7	11:47 p. m.	Moon passes Saturn.
8	6:32 p. m.	Algol at minimum.
10	6:09 a. m.	Full moon.
11	3:21 p. m.	Algol at minimum.
13	7:09 a. m.	Moon passes Jupiter.
18	11:32 a. m.	Moon in last quarter.
22	4:34 p. m.	Moon passes Venus.
23	2:37 a. m.	Algol at minimum.
25	11:24 a. m.	New moon—Total eclipse of sun, visible in South America and South Africa.
26	11:26 p. m.	Algol at minimum.
28	7:00 a. m.	Moon nearest: 221,460 miles.
28	8:15 p. m.	Algol at minimum.
31	3:00 p. m.	Mercury farthest west of sun.
	5:04 p. m.	Algol at minimum.

Subtract one hour for CWT, two hours for MWT, and three for PWT.  
*Science News Letter, December 25, 1943*

ASTRONOMY

# Stellar Timekeepers

➤ PULSATING stars known as Cepheid variables are among the best timekeepers in the world. Particularly regular in their pulsations are the short-period or cluster-type Cepheids, which go through a complete expansion and contraction in about one-half a day. Their changes in size are observed by us as variations in the positions of the lines in their spectra, which are also accompanied by fluctuations in the brightnesses of these stars.

So regular are such stars, for instance, the one known as AR Herculis, a tenth-magnitude star in the constellation of Hercules, that Everett C. Yowell, of Columbia University, has been able to determine its period as 11 hours, 16 minutes and 51 seconds. This information he derived from examining Harvard plates of the region of the sky containing this star and extending from 1899 to 1925. But on plates from the latter time to 1941, the period of the star is found to be 11 hours, 16 minutes, and 49.6

seconds, or 1.4 seconds shorter than formerly.

Together with a change in the rate of its primary fluctuations, this celestial timepiece has revised its "secondary" period as well, as Mr. Yowell finds that

this, too, has changed, increasing by about three seconds in 1925.

What happens inside such a star to make it so suddenly start beating a new rhythm is not known, but it must be explained by some real physical change. Meanwhile, astronomers are searching for other stars whose periods have changed unexpectedly.

*Science News Letter, December 25, 1943*

ZOOLOGY

## Scientific Essay Contest Has Reptiles as Subject

➤ UNUSUAL knowledge of reptiles may win some scientist \$60 and possibly \$100 in the 1944 contest for the Dr. William Johnson Walker prizes offered annually by the Boston Society of Natural History.

*Science News Letter, December 25, 1943*

AGRICULTURE

## New Machine Uniformly Plants, Waters Seedlings

➤ A MACHINE that undertakes to eliminate back-breaking "stoop labor" in the fields is a mechanical transplanter on which patent No. 2,333,945 was granted to A. D. Mast and L. A. Furlow of Lancaster, Pa. Large cartons of seedlings of such plants as tobacco, tomato and cabbage are placed in big, box-like magazines. Padded mechanical fingers remove them one by one and transfer them to a grooved wheel or disk that sets them into the soil at a uniform depth. At the same time, a regulated quantity of water is delivered from a reservoir.

*Science News Letter, December 25, 1943*

The United States used 9,000,000 tons of commercial fertilizers in 1941.

### ERRATA, Vol. 44, Nos. 1-26, July-December, 1943

PAGE	TITLE BEGINS	CORRECTIONS
23	Study Enemy Weapons	Col. 2, line 2, July-August for June 30.
28	"Short"	Col. 3, line 1, after corn crop insert not including corn fed to livestock on the farm.
82	Do You Know	Par. 3, line 3, Cymbopogon for Cymbogon.
192	Philosophy	Col. 3, line 7, peck for peak.
198	Degreasers Cause Death	Par. 3, line 1, Some for The; lines 7-8, incoordinately for individually instead of together; line 13, after is insert sometimes.
249	TB Protection	Par. 4, line 5, she for he.
304	Identification Marks	Line 8, ultraviolet ray for X-ray.
308	Prehistoric Baths	Throughout article, Hernandez de Alba for de Alba.
341	Salt Taken from Water	Col. 3, lines 10-11 to read, the chemical and absorbed salts were retained by a.

