



Our position is not at the center, which lies toward Sagittarius, but we are about 25,000 light years away from it. That is the distance that light, which travels about 11,000,000 miles a minute, would cover in a year. The brightest part of the Milky Way, therefore, is in the region of Sagittarius though because it is low in the sky this month it may not appear any brighter than the more favorably placed region above us in Cygnus.

Our galaxy is not the only system of its kind, but millions of others can be observed with telescopes outside its limits. One of these is visible to the naked eye. This is in the constellation of Andromeda, and its position is indicated on the map, by the small X under the letter R in the name of the group. This is so distant that for a long time its nature was quite a controversial matter among astronomers. Many of them thought that it and some other similar "spiral nebulae" were glowing clouds within our own system, for even the biggest telescopes failed to show any stars in their makeup. It took the 100-inch reflector at the Mt. Wilson Observatory, still the largest in the world, to break it up and reveal the separate

orbs. When the 200-inch telescope at Mt. Palomar takes the title away from the 100-inch, it will show them still better, and also will probably resolve some of the still more distant outer galaxies.

Distance of the one in Andromeda is about 800,000 light years, which means that when you observe it, the light that enters your eye has been on the way for 8,000 centuries—it began its journey before man himself had appeared on earth. Other light rays are starting from it now. What will they find when they complete their journey in this direction?

**Time Table for September**

Sept.	EST	
3	9:00 a. m.	Venus beyond sun
7	10:57 p. m.	Moon in last quarter
10	5:58 a. m.	Moon passes Mars
12	4:46 a. m.	Moon passes Saturn
	6:00 a. m.	Moon nearest—226,000 miles
14	2:28 p. m.	New moon
	5:33 p. m.	Moon passes Venus
15	1:31 p. m.	Moon passes Mercury
19	4:44 a. m.	Moon passes Jupiter
22	12:42 a. m.	Moon in first quarter
23	4:29 p. m.	Beginning of autumn
24	2:00 a. m.	Moon farthest—251,400 miles
30	1:41 a. m.	Full moon

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

Add one hour for the corresponding Daylight Saving Time.

Science News Letter, August 30, 1947

**METALLURGY**

**Use Cold-Drawn Steel**

► COLD-DRAWN steels are winning such an important place in many applications that standard specifications are now to be prepared by a technical committee of the Society of Automotive Engineers.

The undertaking is viewed as a step toward wider use of these basic materials in the automotive and other

industries, with a resulting saving in time and production costs. Cold-drawn steels make better parts, it is claimed, such as bolts, studs, shafts, pinions, axle tubes, frame supports and shackle pins.

The cold-drawing of steels and other metals is not a new process, but one now more widely usable because of new technics. It consists of an operation to

reduce the cross section of a rough metal bar, and to increase its length, by drawing it through a series of conical tapering holes in die plates. Each succeeding hole is a little smaller than the preceding one.

The holes may be round, square or of other shapes. The dies may be made of a number of materials ranging from industrial diamonds, tungsten carbide and steel to chilled cast iron. Metals can be formed to much closer dimensions by cold-drawing than by other ordinary processes. The method is used to produce wire, bars for bolts and other accessories, and to form tubing.

The term cold-drawing should be distinguished from cold-rolling and cold-working. Cold-working, a process used in ancient times by shaping metals by hammers, includes the other two. Cold-rolling, which consists of passing metals between a succession of heavy rollers, is used in the production of sheets, strip steels, flat wire and other products. It is used also to produce a hard, smooth, even finish for hot-rolled metals. The formation of metal for automobile tops and fenders, by pressure in a mold, is a widely-used process of cold-working.

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