9, and again on July 5. This is why the early days of July bring us one of the rare chances we have to see it.

At an average of 35,946,000 miles from the sun, Mercury's distance is about 39% of that of the earth's. This means that it receives far more heat from the sun than we do—about seven times as much. Also it has no atmosphere to ameliorate this flood of radiation. The reason for this is that it is not big enough to hold a layer of air, even if we could provide it with one. Though we are used to thinking of the force of gravity as attracting objects big enough to see and feel, it also pulls on the molecules of nitrogen and oxygen that make up our atmosphere. Without this pull the movements of these molecules would soon take the atmosphere away, never to return. With its smaller size the pull of gravitation on Mercury is only about a quarter as much as ours. This is not enough to hold an atmosphere against its own tendency to disperse.

But despite Mercury's proximity to the sun, a few years ago Mt. Wilson astronomers, using a heat-measuring device called a thermocouple on their great 100-inch telescope, the largest in the world, found that part of Mercury, at least, was not radiating any appreciable heat. This means that its temperature is close to the absolute zero of 460 degrees below zero Fahrenheit. This was for the half of the planet turned away from the sun. The hemisphere toward it, on the other hand, was found to be about 660 degrees Fahrenheit, above that at which lead will melt.

This is evidence that the planet turns once on its axis in the same 88-day period that it takes to encircle the sun. It always keeps the same face toward that body, just as the moon does toward the earth. Probably it does so for the same reason. Though there is no water on Mercury, it may once have been in a more plastic condition than it is now, and the sun would have caused great tides. As it revolved on its axis, these tides would have had a braking effect, With the planet always turning the same part sunwards, the braking action ceases, and we end with the condition that now prevails.

Celestial Time Table for July

July	EST	
1	2:18 p.m.	Moon passes Venus
3	1:59 a.m.	Moon passes Mars
	6:00 a.m.	Earth farthest from sun, distance 94,452,000 miles
5	2:00 p.m.	Mercury farthest east of sun
6	12:15 a.m.	Moon in first quarter
	6:28 a.m.	Moon passes Jupiter
10	3:00 a.m.	Moon farthest from earth, distance 251,900 miles
14	4:22 a.m.	Full moon
21	2:52 p.m.	Moon in last quarter
25	10:00 p.m.	Moon nearest, distance 226,000 miles
28	6:53 a.m.	New moon
31	9:53 a.m.	Moon passes Venus
	5:43 p.m.	Moon passes Mars

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, June 29, 1946

PHYSICS

200-Foot Chimney Aids in Study of Smoke Nuisance

➤ A HIGH, smoking chimney usually connotes industrial activity at its base. But scientists at the meeting of the American Geophysical Union heard Dr. Phil E. Church of the University of Washington tell of a 200-foot smokestack with no factory attached, put up purely for the purpose of giving off smoke. It was smoke without a fire, too, for it consisted of the white oil-fog emitted by an Army M-1 smoke generator such as was used during the war to conceal troop movements and military installations.

Purpose of this fireless, factoryless smokestack was to study the behavior of smoke in the air at various wind velocities, and its degree of dilution with air at various distances from the source. These are of course matters of much concern in the placing of factories and power plants, if complaints about smoke nuisance are to be avoided.

Amounts of smoke in the air were determined by drawing air through a tube past a photocell. Even very small quantities of the oil-fog would cause a definite shift of the pointer on the reading instrument. The "smoke-eye" was mounted on a truck that could travel over any terrain to reach a spot where a reading was wanted.

Science News Letter, June 29, 1946

Do You Know?

World records of lifting heavy loads to great heights by airplanes have been recently broken by B-29 Army planes; one lifted a 2,200-pound load to 45,000 feet altitude, and another 11,000 pounds to 42,780 feet.

Irish moss collecting is the oldest seaweed industry in America; known also as carrageen, it has been harvested for a century to make blancmange, and now for carrageenin, a stabilizer in chocolate milk.

With increased use of gas turbines and jet planes, the total amount of high-octane *fuels* for aviation will decrease because in them octane number is not the critical characteristic.

German jams during the war, called mixed fruit jams, were made from a combination of pumpkin, rhubarb, green tomatoes, beets and various fruits.

The *Torrey pine* is found only on a strip of land two miles wide and eight miles long near San Diego, Calif.

American *"desert forests"* are not timberlands but fantastic areas of tree-lilies, cacti, yucca and similar growths.

Britain's *bread loaf* is now seven-eighths as heavy as its former loaf.