

◊ * ○ • SYMBOLS FOR STARS IN ORDER OF BRIGHTNESS

remains visible for the longest time after the sun has gone down. At the elongation on April 5, however, Mercury will be only 30,800,000 miles from the sun, considerably less than average.

Mercury Above Sun

What makes this a favorable time to see Mercury is that it is in the spring. As seen from the northern hemisphere, Mercury at eastern elongation is now almost directly above the sun, and its distance away from that orb is most effective in delaying its setting. On the contrary, when a greatest eastern elongation happens in the autumn, as it will on Nov. 28 this year, it may be as far from the sun, but instead of being above it, is well to the left. Thus it descends below the horizon a relatively short time after sunset.

In its physical characteristics Mercury seems a most unpleasant place, judged by terrestrial standards. Just as the moon always keeps the same hemisphere toward earth, Mercury apparently keeps one half always towards the sun. This half therefore gets very hot, up to 660 degrees Fahrenheit, which is above the melting point of lead. This has been determined from measurements of radiation from the illuminated part of the planet.

One Side Always Dark

From the dark side, on the other hand, no radiation whatever has been detected. This leads astronomers to conclude that this area never turns sunward, otherwise some heat would be stored there. The temperature on this hemisphere is probably close to 460 degrees below zero Fahrenheit, the absolute zero of space.

One reason for the high temperature of the illuminated half of Mercury is found in its proximity to the sun. At a distance of a little more than a third that of the earth, it gets about seven times as much heat as we do. And in addition there is no atmospheric layer to afford even partial protection from the sun's heat and glare.

Celestial Time Table for April

April	EST	
5	3:00 p. m.	Mercury farthest east of sun, visible as evening star low in west after sunset for a few days around this date
6	5:52 a. m.	New moon
7	9:26 p. m.	Moon passes Mercury
8	3:00 p. m.	Neptune nearest, distance 2,722,000,000 miles
9	7:53 a. m.	Moon passes Venus
11	8:00 p. m.	Moon farthest; distance 251,600 miles
14	7:55 a. m.	Moon in first quarter
19	9:13 a. m.	Moon passes Saturn
21	4:30 p. m.	Full moon
23	6:00 p. m.	Moon nearest, distance 225,200 miles
24	11:00 p. m.	Mercury between earth and sun
28	7:17 p. m.	Moon in last quarter

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

Science News Letter, March 31, 1951

BIOLOGY

No Fungus, No Potatoes For Dinner Tonight

► THE POTATOES in your dinner tonight probably would not have grown at all without the help of a fungus. This possibility was put forth by three scientists who have tried unsuccessfully to grow potato tubers—the fleshy part of the plant that we eat—without this fungus.

G. H. Rieman, D. C. Cooper and R. W. Hougas, of the University of Wisconsin, tested 16 varieties and strains of Wisconsin potatoes as well as samples from seven other states. The fungus appeared in every potato, no matter where or how it was grown.

Their finding fits in with discoveries that there are foreign micro-organisms in many plants. An orchid, for instance, cannot grow at all without first being inoculated with a fungus.

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ENGINEERING

Electronic Devices Serve as Inspectors

► SO-CALLED inspectors in machine shops are being replaced by mechanical and electronic devices that can sort, count and measure faster than humans, and with more accuracy, the American Society of Tool Engineers was told by A. C. Sanford, Federal Products Corp., Providence, R. I.

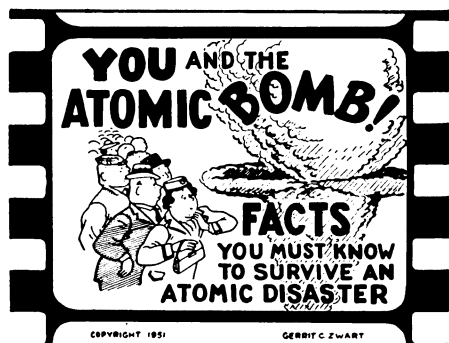
An important job of the inspectors is to measure the products as they come from the machines and operators to see that they conform to the particular measurements required. The mechanical or electronic devices that are now taking over the job use mechanical movement, air pressure, electrical or magnetic currents, or even radioactive carbon from an atomic pile, he stated. They are capable of millionth-inch accuracy, he said, and they relieve operators of the tedium of repetitive operations.

One new way of applying the gaging device is to attach them directly to production machines, he explained. Here, by automatically adjusting the machines so that they will produce only acceptable parts, the gages eliminate the need for inspection altogether.

Continuous abrasive belts for grinding, to replace milling machines on certain jobs, was recommended to the tool engineers by W. A. Papworth, Porter-Cable Machine Co., Syracuse, N. Y. In addition to the advantage of higher speeds on many jobs, abrasive-belt machines cost only a fraction of the machines they replace.

He cited many instances in which both production and product quality had been improved by abrasive-belt grinding. In finishing the flat surface of an aluminum die casting, a milling machine produced 37 pieces per hour, but an abrasive belt grinder produced three times as many.

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This filmstrip consists of 80 illustrations and will help the Science teachers and Civil Defense workers who have been called upon to explain the facts of "DISASTER PREPAREDNESS."

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