

## ASTRONOMY

# Mars Closest Since 1943

During May the red planet shines brightly in the constellation of Virgo, the virgin. Distance of Mars at opposition this year will be 51,860,000 miles.

By JAMES STOKLEY

► **COMING CLOSER** on May 8 than it has since December, 1943, the red planet Mars now shines brilliantly in the southern evening sky. On that date its distance will be 51,860,000 miles.

By the astronomer's scale of brightness it is now of magnitude minus 1.5, which means that it is about ten times as bright as a typical first magnitude star.

The position of Mars in the evening sky is depicted on the accompanying maps, which show the appearance of the skies at about 10:00 p.m., May 1, an hour earlier at the middle of the month and two hours earlier at the end. (Add one hour if you are on daylight time.)

Mars stands in the constellation of Virgo, the virgin, a little to the left of the bright star Spica. To the right of this star is our other visible evening planet, Saturn, a little brighter than Spica, though considerably fainter than Mars.

To the right of Virgo is Leo, the lion, with Regulus, another star of the first magnitude. It stands at the end of the handle of the sickle, a sub-group within the constellation. And directly above the left-hand end of Virgo is the figure of Bootes, the bear-driver, with bright Arcturus.

Toward the west, a few of the bright stars of the winter evening are making their last stand. Low in the northwest is Capella, in Auriga, the charioteer, and next to the left are the twins, Gemini, with first-magnitude Pollux. Still farther left we find Canis Minor, the lesser dog, with Procyon.

To the northeast, in a position whence it will climb higher into better view during the evenings of the coming months, is Vega, in Lyra, the Lyre. Just below Vega is Cygnus, the swan, with Deneb.

This star is also of the first magnitude, though the fact that it is so near the horizon dims it considerably. The same thing is true of Antares, in Scorpius, the scorpion, which is just peeping over the southeastern horizon.

In addition to Mars and Saturn, the only other naked-eye planet visible during these May nights is Jupiter. Of magnitude minus 1.6, it is slightly brighter than Mars. It rises, in the constellation of Aries, the ram, about an hour before the sun.

Venus is too close to the sun to be seen at present. Mercury, on May 3, is farthest

to the west of the sun, so that it comes up before sunrise. Even at best it is so low that it will be difficult to locate.

Once in about two years and two months, Mars comes near the earth, as it reaches the opposite direction from the sun. However, the distance at such an opposition varies considerably from a maximum of about 63,000,000 miles, to less than 35,000,000 at minimum.

## Favorable Oppositions Periodical

At intervals of either 15 or 17 years there is a favorable opposition, followed by a series of less favorable ones until the maximum is reached, after which they start improving. At present we are on this side of the cycle, the maximum having been reached in February, 1948.

At the opposition of March, 1950, the two planets were 60,700,000 miles apart, and now, with 51,860,000 miles, we have almost reached the average opposition distance of 48,600,000 miles.

In June, 1954, this will be reduced to 40,300,000 miles. Then in September, 1956, comes a very favorable one. At that time Mars will be only 35,400,000 miles away, almost as close as in August, 1924, when it came closer than it will again for several centuries.

In 1956 new instruments and observing techniques will doubtless enable astronomers to go far toward solution of some of the problems of Mars. Even this year, though we have only an average close approach, many astronomers are paying more than the usual attention to this ruddy planet.

The most widely discussed features of

Mars are the curious markings discovered in 1877 by the Italian astronomer Schiaparelli. To him they appeared as long straight lines, and he called them "canali," an Italian word that simply means "channels." But since it sounds like the English word "canals" that is what they have generally been called in English-speaking countries, a rather unfortunate thing because "canal" implies an artificial structure.

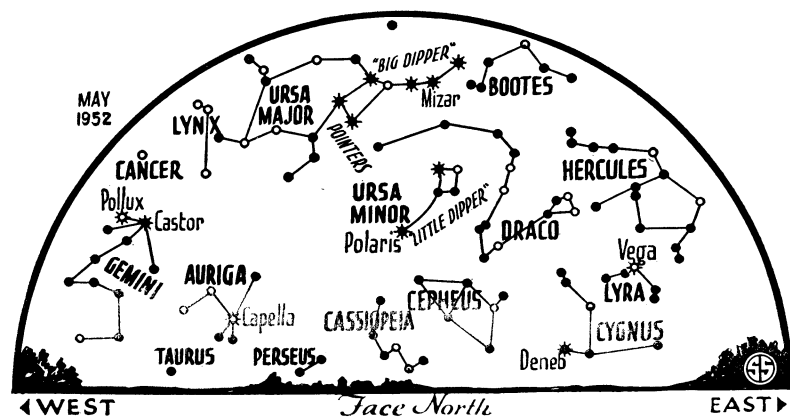
Percival Lowell, who founded the Observatory at Flagstaff, Ariz., principally for the study of Mars and other planets, thought the "channels" were actual canals, built by intelligent beings to conserve a dwindling water supply. This idea, however, has not been widely accepted.

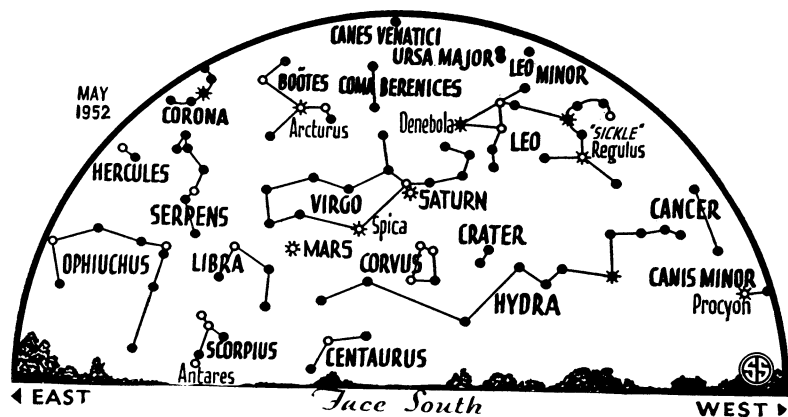
Indeed there are some astronomers who even deny the existence of the canals. They have called them, in effect, an optical illusion, stating that the eye tends to connect scattered irregular spots with narrow lines. Others, however, vigorously refute these suggestions, and point out that while some of the observed lines do go from one larger dark spot to another, in a number of cases they just "dangle" and have no dark spot at the ends.

## Question of Life on Mars

The possibility of life on Mars is likewise a perennial subject for discussion. Since there is no appreciable oxygen in the atmosphere of Mars, and apparently very little water vapor, higher forms of life as we know it could hardly exist.

This, however, may not bar some primitive form of vegetation, such as the terrestrial lichen. These grow on earth under the most rigorous conditions, where no other plant life is possible. They are found in the Himalayas as high as 15,000 feet. They can even grow on bare rock, because they produce acids that decompose the rock.





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

Actually the lichen consists of two separate plants, living together so closely that the unit even reproduces itself. One plant is a fungus and the other is an alga, closely related to the green scum that sometimes appears on ponds.

**Vegetation Probably Present**

In the alga occurs the process of photosynthesis by which the solar rays enable the chlorophyll, the green coloring matter, to build up food materials from carbon dioxide and water. The accompanying fungus supplies minerals, and also protects the alga, so that it does not dry out.

A point against the idea that there may be lichens on Mars is that observations of the green areas which come and go on that planet with the changing seasons show that the spectrum of their reflected light is different from that of lichens and moss on earth. Rather it is more like the light from our higher green plants.

It may well be, however, that the different course of evolution on another planet may be an explanation for such variation. In fact, the presence of vegetation on Mars seems more than possible, it seems probable. But higher organisms, as far as we can judge, seem most unlikely.

**Celestial Time Table for May**

May	EST		
1	9:00 a.m.	Moon's distance,	251,000 miles
	10:58 p.m.	Moon in first quarter	
4	early a.m.	Meteors visible from constellation of Aquarius	
6	8:48 p.m.	Moon passes Saturn	
8	9:00 a.m.	Mars nearest, distance	51,860,000 miles
	10:28 p.m.	Moon passes Mars	
9	3:16 p.m.	Full moon	
13	11:00 a.m.	Moon nearest, distance	228,400 miles
16	9:39 a.m.	Moon in last quarter	
23	2:28 p.m.	New moon	
29	3:00 a.m.	Moon farthest, distance	251,500 miles
31	4:46 p.m.	Moon in first quarter	

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

Science News Letter, April 26, 1952

**TECHNOLOGY**

**Pint-Size Motor Packs Powerful Punch**

➤ ELECTRIC MOTORS, only half as big as their conventional counterparts, have been developed to pack the same punch as their big sisters. That means a new-type motor weighing 10 pounds can do as much work as an old-type motor weighing 20 pounds.

Designed by the General Electric Co., Fort Wayne, Ind., the new fractional horsepower motors should make more motor-driven appliances available to the public because of savings in materials.

The new motor has a more effective ventilation system and uses aluminum generously in its structural parts. A special nylon insulating material is used which should not break down for 50 years.

Using a general-purpose drive, the motor will power such machines as oil burners, fans, blowers, compressors, pumps, farm equipment, air conditioners and commercial refrigeration systems.

Science News Letter, April 26, 1952

**ENTOMOLOGY**

**Scientist Explains How Worm Gets Inside Ear of Corn**

➤ NOW THAT corn-on-the-cob season is just around the corner, here's a question that may have stumped you in years past.

How is it that a beautiful ear of corn, with husk and silk apparently unmarred, can have inside it a thick, hungry worm, an inch and a half long, that has eaten out great chunks of the sweet kernels?

The corn earworm, a pest that is known to both home gardeners and commercial growers of sweet corn, sneaks into the ear when the silk has just emerged, explains Dr. Lauren D. Anderson, associate entomologist in the University of California Experiment Station at Riverside.

"The female moth of this well-known insect lays its eggs at dusk, usually on the freshly-emerged silks of the ear," he said. "Within a few days the eggs hatch into tiny larvae or worms, which feed down the silk channel and onto the grains of corn, where they rapidly grow to maturity and severely damage the tip of the ear in process.

At present, Dr. Anderson said, DDT leads the list of insecticides as the most effective and economical material for earworm control. Dusting or spraying of individual ears, begun as soon as silk appears and repeated three or four times at not more than three-day intervals, is the most effective treatment.

Science News Letter, April 26, 1952

**NEW and USED Scientific Instruments**

**BOUGHT • SOLD • EXCHANGED**

A Complete Selection of Every Important Instrument . . . by World-Famous Makers! Every New or Used Item Sold with our Famous Money-Back IN FULL Guarantee!

**OUR WIDE SELECTION INCLUDES:**  
 MICROSCOPES • TELESCOPES • POLARIMETERS  
 REFRACTOMETERS • PASSAMETERS • COLPOSCOPES  
 VERTXOMETERS • MICRO & MACRO APPARATUS  
 HARDNESS TESTERS • METALLOGRAPHY • PHASE CONTRAST DEVICES . . . and many others!

**A TYPICAL VALUE:**

**SAVE up to \$200.00!**  
 Just 16! Used

**B & L • Leitz • Spencer MICROSCOPES**  
 All One Low Price . . .

**99<sup>50</sup>**

All Are Trade-ins, Thoroughly Checked, Reconditioned and Guaranteed!

**TIME PAYMENTS ARRANGED**  
 Mail and Phone Inquiries Invited

**PEERLESS Camera Stores**

415 LEXINGTON AVE.  
 Corner 43rd St.  
 Opp. Grand Central Terminal  
 New York 17, N.Y. MU 7-1000

**EARN EXTRA MONEY**  
 IN YOUR SPARE TIME  
**ACT AS OUR AGENT**  
 SELL BRAND-NEW  
**UNDER-WRITE PLANT MARKERS**

Your writing appears UNDER the weather-proof surface! Writing can be done with any hard point.

Write today for FREE samples and complete selling information on how you can earn up to \$50 per week in your spare time by selling to garden lovers everywhere!

**R. P. Cargille** 118 Liberty Street  
 New York 6, N. Y.