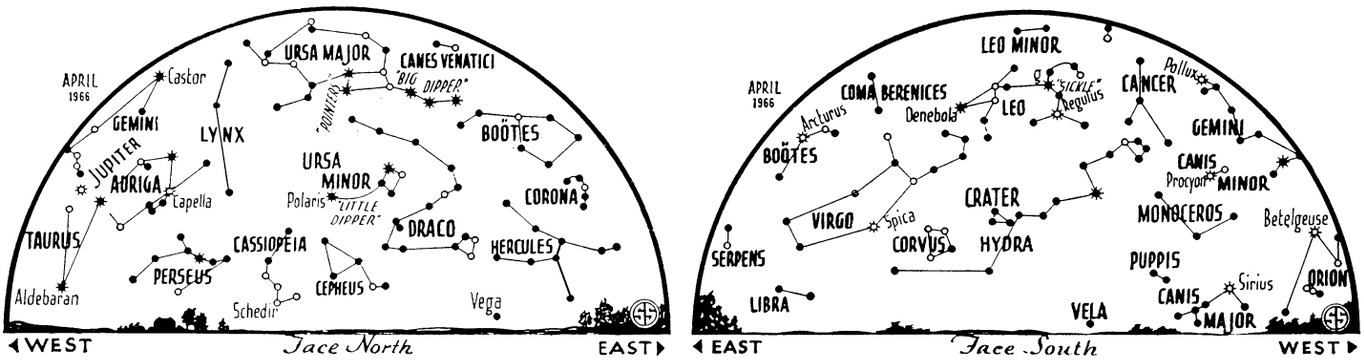

☼ ✱ ○ • SYMBOLS FOR STARS IN ORDER OF BRIGHTNESS

ASTRONOMY

Spring Reflected in Skies

Jupiter, shining in Taurus, is still the most prominent figure in the western sky, while characteristic springtime groups such as Leo appear in the south.

By JAMES STOKLEY

➤ REFLECTING the changing cycle of the seasons, the evening skies now show us that spring is here. Many of the familiar stars and constellations of winter have gone from view and there are even glimpses of summer's offerings.

Jupiter is still the most prominent of all stars or planets, shining in the west in the constellation of Taurus, the bull. Its position is shown on the accompanying maps. These depict the sky as it appears about 10:00 p.m., your own kind of standard time, on April 1. The sky looks the same at 9:00 p.m. in mid-April and at 8:00 p.m. as the month ends. Earlier in the evening the stars shown in the west are higher and farther south.

Taurus Prominent

Taurus is one of the prominent winter constellations; so is its neighbor to the left, Orion, the warrior. Aldebaran is the bright star in Taurus, while Betelgeuse shines brilliantly in Orion. Farther left stands Canis Major, the great dog, with the star called Sirius. Above Canis Major is the lesser dog, Canis Minor, with Procyon. Still higher (shown partly on the southern map, partly on the northern) is Gemini, the twins.

In the south the most characteristic springtime groups appear. Probably the most easily recognized is Leo, the lion. The brightest star is Regulus, which marks the end of the handle of the subgroup called the Sickle. Farther left Denebola, a star of the second magnitude, marks the lion's tail.

Virgo, the virgin, stands to the left of Leo and lower, with Spica its brightest star. This constellation is part of the Zodiac, which also includes Taurus, Gemini, faint Cancer (the crab), Leo and Libra (the scales) only partly visible low in the southeast.

Just above the eastern end of Virgo is Bootes, the herdsman, with Arcturus. This constellation is also divided between our two maps. Just above the part of it shown in the northern sky is the Big Dipper, the best known of all star figures. Actually it is part of Ursa Major, the great bear. Below, in a direction indicated by the pointers in the bowl of the dipper is Polaris, the pole star, which marks the north. Polaris is a star in the Little Dipper, which is part of Ursa Minor, the little bear.

Just above the northeastern horizon, is the first magnitude star Vega, in Lyra, the lyre. On the map Vega is shown as a fourth magnitude star because it is so low, where the earth's atmosphere absorbs much of its light. On summer evenings, when Vega is overhead, it will be the brightest star visible.

The stars of Leo, so prominent in the south on April evenings, may bear little resemblance to a lion. However, it is easier to imagine the figure of a lion around these stars than, for example, the figure of a crab around the stars of Cancer.

On the star maps published in the 17th century, which depicted various figures around the stars, the blade of the Sickle formed the lion's head. Regulus was in his heart, and the star just to the right was in one of the paws. The stellar triangle, in the left-hand part of the group, formed his hind-quarters, with Denebola as the tail and the two fainter stars below as parts of a hind leg.

The name Denebola means "the lion's tail." It is derived, like many other star names, from the Arabic words "Al Dhanab al Asad." In that language, "Dhanab" means "tail." In the constellation of Cygnus, the swan, which is visible on autumn evenings, there is a star called Deneb. This has the same origin, since it marks the bird's tail.

As shown in the ancient star maps mentioned above, the lion's tail used to be imagined as curled at the tip. However, before the second century B.C., so an old story goes, it extended out to the left, to the constellation we know today as Coma Berenices, the hair of Berenice. This is a loose cluster of distant stars, which does have a hair-like appearance.

Queen of Egypt

Berenice was a queen of Egypt about 243 B.C., the wife, and also the sister, of the third Ptolemy, known as Euergetes. She had lovely blonde hair, which she cut off and placed in a temple to show her gratitude to the gods for bringing her husband safely home from war.

But then someone stole the tresses from the altar. Conon, the court astrologer, consoled the royal couple by pointing to the star cluster of Coma. He explained that the gods had been so pleased with the queen's sacrifice that they had placed her hair in the sky.

The constellation of Leo was important to the Egyptians because, in the spring when the sun moved in front of Leo, the Nile overflowed its banks and irrigated their lands, according to Pliny. It has also been said, probably fancifully, that this constellation was called a lion because at that time of year the lions left their usual haunts for the banks of the Nile, to get relief from the heat.

Seen through a telescope, Denebola appears as two stars—one blue, the other orange. Actually, however, they are not close together and, therefore, not a true binary. The two stars just happen to be in nearly the same direction from us. Such a configuration is called an optical double.

The star in the Sickle marked by a small "g" also appears as two when seen through a telescope. One is orange, the other greenish yellow. This is called gamma Leonis, and is a true binary star. Its two components really are rather close, and they revolve around the center of gravity between them. Of the numerous double stars in the sky, this pair is generally considered one of the finest.

Celestial Timetable for April

APRIL	EST	
3	2:00 p.m.	Moon nearest, distance 224,300 miles
5	6:14 a.m.	Full moon
6	8:00 a.m.	Venus farthest west of sun
12	12:29 p.m.	Moon in last quarter
15	1:00 p.m.	Moon farthest, distance 251,800 miles
16	8:00 a.m.	Moon passes south of Venus
17	3:00 p.m.	Moon passes south of Saturn
18	4:00 a.m.	Moon passes south of Mercury
	6:00 a.m.	Mercury farthest west of sun
20	3:36 p.m. EDST	New moon
25	4:00 a.m.	Moon passes north of Jupiter
27	11:50 p.m.	Moon in first quarter
29	1:00 a.m.	Mars behind sun

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

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ASTRONOMY

Ionized Particles Can Polish Mirrors

➤ THE ACCIDENTAL discovery that a beam of charged particles can be used to polish telescope mirrors holds promise of the possibility of making surfaces of mirrors flat to a higher accuracy than obtained by other methods.

The more highly polished, or flat, a mirror is, the clearer the photographs taken with a telescope, other factors being equal.

The discovery of what is termed "ionic polishing" was made by Drs. A. B. Meinel and S. Bashkin of the University of Arizona, Tucson, and Dr. A. Loomis of Kitt Peak National Observatory, also in Tucson.

It happened this way: The new atomic accelerator at the University of Arizona was being tested. A beam of ionized particles was supposed to be focused on the rough side of a piece of fused silica, in order to check on the beam size.

By mistake, the good side was used. When this was discovered, examination showed that this ion-bombarded surface had a polish at least as good and probably better than before it had inadvertently been exposed to the beam.

The surface was surprisingly uniform, the scientists found. They estimate roughly that each ion removed one atom of the target.

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