

The brilliant display of stars appearing in the January evening sky is augmented in 1977 by the appearance of three prominent planets. Two are brighter than any of the stars, while the third is inferior only to one of them.

Brightest of all is Venus, to the west at dusk. It sets about 8:30 p.m., local standard time, on the first and nearly an hour later as the month ends. After the 12th, when it will be farthest east of the sun, the time from sunset to the setting of Venus will shorten.

So brilliant is Venus that you can see it easily while the sky is still quite bright with early twilight, well before any stars appear. But it won't be long until Jupiter becomes visible, considerably higher in the west. A little more than a fifth as bright as Venus, it sets in the early morning.

The third planet is Saturn. It rises in the east about 7:30 p.m. on Jan. 1 and about two hours earlier on the 31st, just as the sun is setting. It's about an eighth as bright as Jupiter. The brightest star of the evening sky, Sirius, shining in the southeast in Canis Major, is about four times as bright as Saturn.

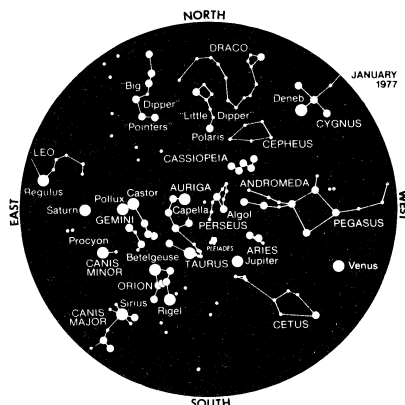
Above it stands Orion, most strikingly brilliant of the stellar groups. Its brightest star is Rigel, in the lower part of the figure, but Betelgeuse, about half as bright and higher, is also first magnitude. A row of three fainter stars (Orion's Belt) stands about halfway between Rigel and Betelgeuse.

Still higher and toward the right you'll see Aldebaran, in Taurus. Jupiter, in Aries, is farther to the right. North of Taurus look for Auriga, with Capella.

Next to Auriga, toward the east, are the

JANUARY STARS

BY JAMES STOKLEY



To use star map hold over head with directions oriented as indicated.

Jan. 3	5:00 am	EST	Earth nearest sun
	5	7:00 am	Full Moon
	6	3:00 am	Mercury between earth and sun
	7	7:00 pm	Moon south of Saturn
	8	11:30 pm	Algol at minimum
	12	3:00 pm	Moon in last quarter
	16	5:00 am	Moon nearest earth
	19	9:00 am	New Moon
	23	6:00 am	Moon north of Venus
	24	7:00 am	Venus farthest east of sun
	26	midnight	Moon in first quarter
	28	1:00 am	Moon farthest from earth
		5:00 am	Moon south of Jupiter
	31	10:00 pm	Algol at minimum

twins, represented by the stars of Gemini. The two brightest are Pollux (nearer the horizon) which is first magnitude, and Castor. This is dimmer so it rates in the second magnitude. Below Gemini stands Procyon, in Canis Minor.

Sirius, Rigel, Aldebaran, Capella, Pollux and Procyon form an irregular hexagon surrounding Betelgeuse. Nowhere else in the sky are so many bright stars concentrated in so small an area. That's why the winter evening skies look so brilliant, compared with those of other evenings during the year.

In addition, two more first-magnitude stars are visible, but lower so that atmospheric absorption reduces their light. Toward the east, below Saturn and a little to the left, is Regulus, in Leo. And in the northwest, quite low, stands Deneb, at the top of Cygnus.

Two more naked-eye planets will be low in the east shortly before sunrise. Mercury passes between sun and earth Jan. 8, but in the last few days of the month will rise about an hour and a half ahead of the sun. Its lowness and the light of dawn will make it somewhat difficult to see. Mars comes up about an hour before sunrise but will be considerably fainter than Mercury, so perhaps you won't be able to locate it.

On Jan. 23, at 6 a.m., EST, the crescent moon will pass to the north of Venus and they'll make a striking spectacle in the west on the evenings of the 23rd and the 24th. The moon passes south of Jupiter during the day on the morning of the 28th, but that evening they'll still be close. And it passes south of Saturn on the seventh, at 7 p.m. □

• **Jan. 3 (PBS)**—"The Restless Earth" is a major two-hour documentary on the theory of plate tectonics, which contends that the earth's crust consists of large plates which are constantly shifting. The shifting is the cause of earthquakes, volcanoes and other phenomena.

• **Jan. 5 (PBS) NOVA**—"Hitler's Secret Weapon" begins NOVA's fourth season with a historical account of the development of the weapon that not only terrorized London during World War II but also came to play a part in the Apollo moon program as well—the German V-2 rocket. It was the rocket that Eisenhower claimed, had it been perfected just a few months earlier, would have circumvented the Allied invasion of Germany. Wernher von Braun describes how he played the Luftwaffe against the German Army for funds; how he was jailed by the secret police while they tried to gain control of the rocket; how Hitler was hesitant in supporting the weapon's development, and how 124 of the top 125 Peenemünde scientists finally came to the United States.

• **Jan. 12 (PBS) NOVA**—"The Hot-

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Blooded Dinosaurs explores the world of the dinosaur scientist and how experts at Harvard University claim they have found mistakes in early dinosaur bone reconstructions. They are finding that dinosaurs, according to tests on fossilized marrow, were probably hot-blooded and that they could walk no faster than 12 miles an hour or their legs would break. And the most fascinating revelation of all, that dinosaurs are alive and well today as modern day birds.

• **Jan. 18 (PBS)**—"Voyage of the Hokule'a" celebrates a reawakening of the Hawaiian spirit in response to the American Bicentennial. An epic 3,000-mile journey between Hawaii and Tahiti by a

group of Hawaiians in the same kind of huge double-hulled canoe sailed by ancient Polynesians centuries before Columbus, in search of their ancient heritage.

• **Jan. 19 (PBS) NOVA**—"What Price Coal" examines the price Americans pay, in human terms, for "black gold" energy: land reclamation, black lung disease, large-scale strip mining. It looks at the Coal Mine Health and Safety Act that tries to introduce a scientific set of standards by which to measure mine safety.

• **Jan. 25 (PBS)**—"Voyage to the Ends of the Earth" is the story of the Norwegian explorer Nansen, who in 1890 led the first Arctic expedition to study the polar sea. The production, narrated by Sir John Gielgud, employs on-location shots, dramatization, stills and movie clips.

• **Jan. 26 (PBS) NOVA**—"The First Signs of Washoe" is about a chimp that learns to talk—with her hands. Taught American Sign Language by her teachers, Washoe dispels the notion that only humans can master language and deal with concepts. As a child's vocabulary grows, so has Washoe's, who now can speak sentences.