



of the birth, in Hanover, Germany, of Friedrich Wilhelm Herschel, better known to fame as Sir William Herschel. He served with the Hanovarian guards as a bandsman, but after being released (and not deserting, as sometimes stated) from his military obligations, he emigrated to England. In 1766 he became organist at the Octagon Chapel, in Bath. As he was interested in astronomy, and could not afford to buy proper telescopes, he made his own, the first in 1774, which was followed by many others.

With one of these, a reflector, in which the light was focussed by a concave mirror  $6\frac{1}{2}$  inches in diameter, he made his first great discovery in 1781, when he found the planet Uranus. Because of this, King George III appointed him King's Astronomer, and installed him in a house at Slough, near Windsor Castle. He was given a pension, so that he could devote his entire attention to astronomy and telescope construction. His greatest was an instrument with a four-foot mirror; one that, even today, would be considered large.

Other important discoveries followed, including two moons of Uranus and two of Saturn. He found out the true nature of the double stars, pairs of bodies revolving around their common centers. He discovered the true form of the Milky Way system, or galaxy, of which the sun is part. It was his suggestion that the great nebula in the constellation of Andromeda was another such galaxy, or, as he called it, an "island universe." Only as recently as 1925 was this confirmed at the Mt. Wilson Observatory.

#### Aided by Sister

In many of his observations he was aided by his sister, Caroline Herschel, and, later, by his son, Sir John Herschel, whose fame was almost as great as his father's. Sir William died in 1822, the greatest astronomer of his day, and one of the ten greatest of history.

During November the moon will be visible in the evenings except from about the ninth to the twenty-fourth. Its phases are shown below. It is nearest the earth, at perigee, at 11:00 p. m. on the tenth, with a distance of 227,600 miles. Apogee, the greatest distance, comes at 10:00 p. m. on the 26th. The distance is then 251,900 miles.

Except for the moon, the brightest object seen in the evening sky during November is the planet Jupiter. It stands in the southwest at the time for which the accompanying maps are drawn (10:00 p. m., November 1; 9:00 p. m., November 15 and 8:00 p. m., November 30). Near it is Fomalhaut, a bright star in the constellation of Piscis Austrinus, but much inferior in brilliance to the planet. High in the south, in the fishes, Pisces, is the second planet of the November evening, Saturn. It also is considerably fainter than Jupiter, but it is more brilliant than any other object in the vicinity.

#### Northern Cross

Several easily identifiable star groups appear in the evening. In the west, standing vertically, is the "northern cross," part of Cygnus, the swan, with Deneb at the top. Near the foot of the cross, to the right, is Vega, of Lyra, the lyre, while in a similar position to the left is Altair, of Aquila, the eagle.

High in the south, above and to the right of Saturn, is the "Great Square of Pegasus," though the star in the upper left corner is Alpheratz, of the neighboring constellation of Andromeda. The rest, however, are part of Pegasus, the winged horse. Low in the east are three stars in a vertical row, the belt of Orion, the warrior. The bright star to the right is Rigel, and the one to the left Betelgeuse, both of the same constellation. Above Orion is Aldebaran, of Taurus, the bull. Next to Taurus, to the left, is Auriga, the charioteer, with first magnitude Capella.

The always familiar "big dipper" this month is in its poorest position, low in the north. High in that direction, above Polaris, the pole star, is the well-known M-shaped figure of Cassiopeia.

A few hours before sunrise the planet Mars rises in the east. On the 25th of the month, Mercury will be in the evening sky just after sunset, but so low that it will be difficult to find. Venus has now gone from the sky, for it is close to the sun, and will, in fact, be in line with it on the 20th.

#### Phases of the Moon:

	E. S. T.
Full	Nov. 7 5:23 p. m.
Last quarter	Nov. 14 11:20 a. m.
New	Nov. 21 7:05 p. m.
First quarter	Nov. 29 10:59 p. m.

*Science News Letter, October 29, 1938*

#### BIOLOGY

### Biological Abstracts To Be Published in Parts

**B**IOLOGICAL Abstracts, key journal for students of the life sciences, has grown too big for the average individual subscriber and is about to do what many organisms do when they become too bulky—split into several parts. Yet this important publication will still manage at the same time to remain one.

Biological Abstracts, like the abstract journals in the other sciences, consists of extremely condensed summaries of articles in all the scientific journals in its particular field, as well as of all new biological books. Scientists, by running through its pages, can get the gist of all articles published everywhere, and thus keep track of what is going on in their chosen lines of activity.

Difficulties have developed, due to the fact that Biological Abstracts summarizes everything that appears in the whole wide field of biology, thus becoming very thick and of course costly to publish. At the same time, practically every biologist is a specialist, reading only the section of the journal devoted to his particular field.

For this reason, the board of editors has announced that Biological Abstracts will henceforward be published in five sections. The individual biologist may subscribe to any section or sections he desires, at annual rates from \$6 to \$9. The entire journal, with all five sections between the same covers, will continue to be used by libraries, at \$25 a year. This arrangement, it is hoped, will do much to solve the financial difficulties previously encountered.

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