

September Stars HOW TO FIND THEM

The brilliant constellation of the Scorpion, which was so striking last month, is now sinking in the West, while to take its place there are beginning to appear in the east the important though faint constellations of Antares, the Ram, and Pisces, the Fishes, says Professor Eric Doolittle in the Brooklyn Standard Union.

THE MILK WAY. Perhaps the most beautiful feature of the September sky is that great multitude of countless stars, the "diamond and ample road whose dust is gold."

which forms a great arch over the heavens from the south to the north. At no other time of the year is this galaxy so bright as now, but to see it at its best the observer must be away from the glare of electric lights and the sky must be very clear. If he will examine it with a small telescope or a pair of opera-glasses he will discover that it is not merely a nebulous stream, but a vast aggregation of suns, which are here and there apparently congregated together in great swarms and in other parts are scattered or even absolutely vanishing.

What the true form of this great universe of stars is, what its size is and how its stars are moving, whether they are gradually drawing together or scattering or even revolving about various centers, is not yet known. It is only known that all of the brighter stars of the sky, our own sun included, belong to this enormous cluster. The discovery of the changes which are going on in the universe of stars as a whole will be one of the greatest achievements of the astronomy of the future.

THE SEPTEMBER CONSTELLATIONS.

Let the observer face the South. Near the ground is Sagittarius, above this is Aquila, the Eagle, with Delphinus, the Dolphin, a little to the northeast, while directly overhead is Cygnus, the swan. Facing the North, the brilliant constellations Cassiopeia and Perseus are seen, while to the east of the Milky Way, stretching all the way from Perseus to Delphinus, are the constellations Antares, the Ram and Pegasus.

Andromeda, the unfortunate daughter of Cepheus and Cassiopeia was chained to the rocks in exposure to the monster in punishment of her mother's boast of beauty. Perseus, her rescuer, is represented by a bright constellation near, and as this is surrounded by the star dust of the Milky Way, he was characterized as "stirring up a dust in Heaven." This group is described by Kingsley:

"I set thee high for a star in the heavens *** Spreading thy long white arms, all night in the heights of the ether, Herald of the sire and the hero, thy spouse, while near thee thy mother sits in her ivory chair as she plaits ambrosial tresses: All night long thou wilt shine."

THE NEBULA OF ANDROMEDA.

The observer should not fail to look for the nebula of Andromeda. This with a pair of opera glasses is clearly seen as a small oval milky white patch of light. It is even visible to the naked eye and was described as early as the 16th century as the Little Cloud. This nebula is believed to be a new and enormous system, somewhat similar to the solar system, in process of formation. There is a central condensed nucleus surrounded by a series of rings very like Saturn's ring system, and it is believed that all of the interior part will condense into one great sun while the outer portions will condense into smaller suns and finally cool down into world just as the planets of the solar system have done. There is indeed a round condensed mass in the border of the great nebula which is believed to

be a planet whose birth is even now beginning. This study of the beginnings of worlds, during the formation of which countless ages of time pass away, is one of the grandest conquests of astronomy. But such knowledge can be derived with far greater certainty from a comparatively new branch of astronomy known as Double-Star Astronomy.

THE DOUBLE STARS.

Many of the stars of the sky, when viewed with a telescope, are seen to be not single stars, but two stars very close together. They are really two immense suns, which are revolving about one another under the action of the force of gravity. Many thousand such systems have already been discovered. A study of the way in which these bodies move has led to many most interesting discoveries. It has been shown, for example, that the great law of gravity is not peculiar to the solar system, but that it operates throughout the whole universe; that every particle of matter, even in the most remote star, attracts every other particle in exact accordance with this law.

There are many thousand clouds of nebulous matter in space, all of which are visible to us being many millions of miles in diameter. Each of these nebulas is certainly slowly condensing or shrinking together under its own gravitation, and as it condenses it grows hotter and hotter and also begins to rotate about an axis. It may condense into a single sun, or, if the velocity of its rotation is great enough, it may break into a double nebula. In the latter case each part will separately form a star and the nebula will have become a double star system.

At first the two stars are intensely hot and in a plastic condition so that their mutual attractions raise enormous bodily tides on each of them. The effect of these is to rapidly push the two suns farther and farther apart and also to change the form of the paths which they pursue about one another. At last the contracting suns become solid and cold; the tidal action ceases and there remain but two dark bodies revolving slowly about one another a great distance apart.

All stages of this development are visible to us in the sky from the double nebulas to the old systems which are just dying out. In this manner also the earth and moon were originally developed from a single nebulous mass.

The stars of the map marked H and K are double; H cannot be seen with a small glass; it is composed of two stars revolving about one another in twenty-six years. K can be seen with a good field glass, and so also can the pairs marked L and R. The former of these is made up of two stars, one of which is golden and the other azure, presenting perhaps the most striking effect of color in the heavens. The latter is a quadruple star, visible as a double star to a keen eye even without a telescope. The star marked I is a triple star presenting an extraordinary fine contrast of colors. Formalhaut (marked F), has recently been discovered to have a faint companion, but this is only visible in the largest telescopes.

THE PLANETS.

Saturn and Jupiter are both in better positions for observing than last month. Saturn is in the constellation Capricornus while Jupiter in the early evening is low down in the East. Toward midnight this planet has mounted high up in the heavens, and it is then the most brilliant star in the sky.

The position of Uranus is as shown in Sagittarius, while Neptune is in the constellation Gemini, nearly midway between the stars of Nu and Epsilon.

the sun are resisted by the other, through which they move like bullets through the air, there must come a time when the career of every one of them will be terminated by a catastrophe such as the imagination can hardly picture.

Encke's comet is a body of relatively very small mass. Compared with the earth, it is like thistledown to a cannon ball.

The thistledown quickly reveals the effect of the air resistance, while the cannon ball flies on with a velocity which at first seems hardly to be diminished at all. But if the resistance continues long enough the massive ball no less than the bit of down will be brought to rest.

So, for ages after Encke's comet had plunged into the sun, the earth and the other planets might continue pursuing their orbits, scarcely showing the effects of the resistance to their motion.

It is by no means certain, however, that the resistance suffered by Encke's comet is experienced equally all around its orbit. It has been thought that the retardation may be greater in the spaces near the sun, and that the comet, to the ether, but to some measure, swam through which the comet passed on each return.

In this case the phenomenon would not be extended to the earth or other members of the system that are not subject to a similar meteoric encounter, and thus Encke's comet may be swallowed up by the sun without, after all, implying a similar doom for the planetary system.

In the last hundred years the period of the comet has been diminished about six hours.

There are indications that the acceleration is falling off in amount, and this strengthens the supposition that the cause is a meteoric encounter rather than ethereal resistance.

The meteors may be gradually getting out of the comet's track, so that eventually it will obtain a free way, in which case the promised tragedy may have a happy ending; but even in that event the comet will have been brought closer to the sun, and this fact will remain as a memento of the danger run and the peril escaped.

The comet will be in perihelion about the beginning of January, but it should be sighted from the earth, with powerful telescopes, not later than the 1st of September.

In October and November it will pass south of the constellation Andromeda and through Pegasus to the Milky Way in Aquila.

Here it will attain its greatest brightness, and may be visible to the naked eye.

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PRIESTS AS WEATHER MEN.

Six Jesuit priests are the corps of workers in the weather bureau at Manila, a phenomenon that is pointed out to travelers in the far east and one which never fails to arouse their surprise, says the Washington Post. This arrangement, however odd it seems at first, is seen to be perfectly natural when one understands the situation and, to make the situation clear, six columns of the Daily Bulletin, of Manila, were devoted to it in an anniversary edition of that paper.

It is the boast of the capital of the Philippines that she possesses within her walls the pioneer meteorological institution of the Orient. It happened in this way:

In 1865 occurred a typhoon that caused much loss of life and property. This territory had been assigned to the order of Jesuits and it was to them that the people looked for aid in times of stress, just as people in Catholic countries always look to their priests for help and instruction. The priests, realizing the need of some protection against a repetition of such a disaster, determined to establish a meteorological observatory, which they did by the procuring of a single set of instruments to which additions were gradually made. This was in 1865, ten years before the service of Japan was begun and nineteen years before Hong-Kong took up the work.

The priest by whom the beginnings of this work were undertaken was Father Faura, who was allowed to devote all his time to the work of the observatory after 1878. Before that time the priests had done this in addition to their other religious and scholastic duties. Frater Faura won the confidence of the people by predicting typhoons that actually came to pass, and in this way convinced the skeptical of the importance of the work of the observatory.

The success of the earlier years made it seem desirable to increase the efficiency of this work by giving the observatory an official character and making it the center of a system of stations. This was done in 1884 after the priests had made an offer to the Spanish government to erect at their own expense a suitable building. The Manila observatory pointed out to travelers today is the result of this combination of church and state.

It is in this building that the visitor finds himself face to face with men who to all intents and purposes are government officials, yet who wear the black gown of the Catholic priest. American military government has not altered the strange condition. The necessity of an official meteorological service was evident. Americans found a first-class observatory, through a private institution, and a staff of experienced men devoted to their work. It was the reward of recognized ability to leave them there and there they remained.—Macon Telegraph.

Mink and sable coats—those, too, of broadtail, caracul, and moleskin—will be worn.

MORE RIOTS.

Disturbances of strikers are not nearly as grave as an individual disorder of the system. Overwork, loss of sleep, nervous tension will be followed by utter collapse, unless a reliable remedy is immediately employed. There's nothing so efficient to cure disorders of the liver or kidneys as Electric Bitters. It's a wonderful tonic, and effective nerve and the greatest all around medicine for run down systems. It dispels Nervousness, Rheumatism and Neuralgia and expels Malaria germs. Only 50c, and satisfaction guaranteed by Burwell & Dunn Co., druggists.

YOUR POOR STOMACH

needs a rest. Assist digestion by using the GROVER GRAHAM DYSPEPSIA REMEDY.

Try a 25-cent bottle and instantly correct all disorders of the digestive system. Do not hesitate, but act at once! "Three doctors said that I had cancer of the stomach, and I believed it. One bottle of The Grover Graham Dyspepsia Remedy convinced me that they were wrong. Thanks to its use I am now perfectly well."

GOOD DIGESTION is essential to a good appetite and perfect health waits on both. Good digestion, good appetite and perfect health mean human happiness. The use of The Grover Graham Dyspepsia Remedy ensures robust health, strength and vitality.

Every Woman is interested and should know about the wonderful MARVEL Whirling Spray. The new Vaginal Spray, Intercourse and Discharge. Best-Selling, Most Convenient, Most Economical.

LADIES—When in need send for free trial of our never failing remedy. Relief quick and safe. Paris Chemical Co., Milwaukee, Wis. 7-16-St.-e.o.w.

WINE OF CARDUI advertisement featuring a portrait of Ethel Baker and text describing her recovery from illness.

MORPHINE advertisement for Opium, Whiskey and all Drug Habits, mentioning a private sanatorium.

\$300.00 FOR A NAME advertisement for Pratt & Lambert varnish makers.

Your Poor Stomach advertisement for Grover Graham Dyspepsia Remedy.

GROVER GRAHAM DYSPEPSIA REMEDY advertisement with an illustration of a man on a bicycle.

Hammam Paint advertisement for a Gallon of PURE LINSEED OIL mixed with a gallon of Hammam Paint.

Guaranteed 5 years advertisement for a prominent minister's endorsement.

Ezell-Myers Co. advertisement for a Hand Book.

Every Woman advertisement for Marvel Whirling Spray.

C. B. Flournoy & Co's. advertisement for Beautiful Fall Stock and Hand Painted China.

The KEELEY INSTITUTE, Greensboro, N. C. advertisement for a FREE Illustrated Hand Book.

GRAPPE advertisement for PURE OLD VIRGINIA SUN CURED TOBACCO.

Everything in Jewelry and Optical Lines advertisement for The Palomountain Co.

DR. LAFRANCO'S COMPOUND advertisement for Ladies.

DUCRO'S ELIXIR advertisement for All Kinds of Fevers.

There's Health in Lemon Juice advertisement for Mozley's Lemon Elixir.