POSITION OF THE PLANETS IN MARCH.

MARS

is morning star, and takes the lead on the planetary record for February, for he is near the culmination of his size and brilliancy. He rises on the 1st of the month, in the southeast, about 10 o'clock in the evening, and is easily recognized as a large ruddy star, 9° northeast of Spica. He rises on the last of the month near half past 7 o'clock, and is then about 5° northeast of Spica, approaching the bright star during the month. Mars rises on the 1st at 9 h. 43 m. P. M. On the 31st he rises at 7 h. 20 m. P. M. His diameter on the 1st is 12·4″, and he is in the constellation Virgo.

JUPITER

is morning star, and is increasing in brilliancy as he approaches the earth. On the middle of the month he looms above the southeastern horizon about midnight, the most radiant star in the whole heavens, till Venus appears upon the scene. Jupiter rises on the 1st at 12 h. 46 m. A. M. On the 31st he rises at 10 h. 54 m. P. M. His diameter on the 1st is 36·2″, and he is in the constellation Scorpio.

VENUS

is morning star. She is charming to see for the short time she is above the horizon, nearly an hour and a half before sunrise on the 1st, and only three quarters of an hour before sunrise on the 31st. Venus rises on the 1st at 5 h. 7 m. A. M. On the 31st she rises at 4 h. 50 m. A. M. Her diameter on the 1st is 13″, and she is in the constellation Sagittarius.

URANUS

is morning star. He is near Theta Virginis and northwest of Spica, and in fine position for observation with the telescope or with the naked eye. Uranus rises on the 1st at 8 h. 38 m. P. M. On the 31st he rises at 6 h. 33 m. P. M. His diameter on the 1st is 3·8″, and he is in the constellation Virgo.

SATURN

is evening star. He is now retrograding or moving backward, and seems to be approaching Pollux on the northwest and Procyon on the southwest, the two bright stars that are guides to his position. He is on the meridian on the 1st at 9 h. 29 m. P. M., and is in most favorable position for observation with the telescope. Saturn sets on the 1st at 4 h. 43 m. A. M. On the 31st he sets at 2 h. 43 m. A. M. His diameter on the 1st is 18·8″, and he is in the constellation Cancer.

NEPTUNE

is evening star. He sets on the 1st at 12 h. 6 m. A. M. On the 31st he sets at 10 h. 11 m. P. M. His diameter on the 1st is 2·4″, and he is in the constellation Taurus.

MERCURY

is evening star until the 3d, and then morning star. He is in inferior conjunction with the sun on the 3d at 2 h. P. M. He reaches his greatest western elongation on the 30th, at 9 h. P. M., and is 27° 49′ west of the sun. He is then visible to the naked eye as morning star in the east before sunrise, but he is so far south of the sun that he will be hard to find. He is in conjunction with Venus on the 27th, at 8 h. P. M., the planets being but 2′ apart. Mercury sets on the 1st at 6 h. 10 m. P. M. On the 31st he rises at 4 h. 48 m. A. M. His diameter on the 1st is 10·4″, and he is in the constellation Pisces.

At the close of the month Mercury, Venus, Jupiter, Mars, and Uranus are morning stars. Saturn and Neptune are evening stars.

PHOTOGRAPHIC NOTES.

Device for Igniting Magnesium Compounds.—A simple arrangement for safely igniting flash light magnesium compounds was exhibited by Mr. Thos. McCollin on the 14th ult., at the Society of Amateur Photographers, in this city, which may be described as follows: An upright stand 4 in. in height, supporting a metal pan about 2 in. square, on which the flash compound was placed. Behind the pan was an alcohol flame, and back of that, projecting into the flame, was a blowpipe tube bent in such a way as to project a jet of air through the alcohol flame horizontally upon the surface of the metal pan. The blowpipe tube was connected by a rubber pipe to a pneumatic bulb; a sudden compression of the latter forced a horizontal flame of alcohol across the pan, which at once ignited the flash compound. The advantage claimed for it was that the operator could stand quite a distance from the flame, and that the sitter would not be disturbed by any preliminary lighting of a taper or match.

In focusing at night for these flash light pictures, Mr. McCollin recommended holding a candle just behind a veil of open crochet work. It was very easy to see the white meshes in the camera, and was quite an accurate method.

A New Transparent Film.—At the same meeting Mr. F. C. Beach exhibited a new flexible transparent film, explaining its various characteristics. It consisted of a sheet of insoluble bichromated gelatine exposed to light, then bleached with sulphurous acid aud coated on one side with the sensitive emulsion. It can be exposed in the camera like a glass plate, developed, and fixed in the usual way, but is dried, after soaking in alcohol for fifteen minutes, by being placed between two sheets of blotting paper and wrapped around a paper cylinder not less than three inches in diameter.

After this it dries within a short time, perhaps half an hour. Negatives made on the film are grainless, quick printers, and no heavier than paper.

It is made in England under Froedman's patent.

Improved Pyro-Hydroxylamine Developer.—James H. Stebbins, Jr., of the Society of Amateur Photographers, advises the use of the following formula:

No. 1.	
Hydroxylamine	2 grammes.
Pyrogallol	15 grammes.
Water (distilled preferred)	100 c. c.
No. 2.	
Carbonate of soda (crystals)	24 grammes.
Sodium sulphite (crystals)	71 grammes.
Water	1,000 c. c.

To develop, take 65 c. c. of No. 2, and add thereto at first 2 c. c. of No. 1. When development is three-quarters advanced, add from 1 to 2 c. c., if it is seen more density is required. Thirteen plates may be developed with one solution. The color of the negatives is steel gray, and the shadows are remarkably transparent.

The developer is slower than when pyro alone is employed, but quicker than the hydro-quinone developers.

It is an excellent developer for lantern slides or transparencies. Does not stain the film in the least. Mr. Stebbins finds the hydroxylamine acts as a preserver of the pyro similar to sulphite of soda and, being a more stable salt, is probably more desirable.

Military Notes.

Now that Italy inclines to German alliances, the French are seeking new means of strengthening their eastern or Alpine frontier, and the French military press is urging more haste in the construction of the cordon of forts which the general staff is organizing along the giant hills that separate the republic from the kingdom of Italy. There was a time when Alpine snows were considered impassable, and Hannibal's bold feat of leading an army over them was the wonder of the age. Napoleon crossed with his army in 1800 over the pass of the Great St. Bernard, which is 7,963 feet above the plains below; and since then, the Alps have not been accounted as a safe barrier against invasion. Now there are as many as fourteen good roads over the various sections of the Alps—safe even for carriages; the most frequented being that of Mt. Cenis, built by Napoleon in 1805, 30 feet long and 18 feet wide. The French are now transporting heavy siege artillery to their new or remodeled works commanding the highways that lead to France, and so arranged as to be capable of "sweeping" them from two sides. *L'Avenir Militaire* calls attention to the fact that, if Italy is to be invaded, Briancon is the point from which the enterprise may the more readily be accomplished. This is the highest town in France—4,283 feet above the sea level. It commands the principal pass to the Italian and Swiss frontier, and has seven forts, protecting all approaches, with subterranean and connecting passages cut through the solid rock.

"Red tape" and the "Circumlocution Office" are getting a deal of severe criticism in both England and France. In the former country, Lord Charles Beresford, who recently resigned his office of Junior Lord of the Admiralty, has given as the reason that timely preparation cannot successfully cope with the red tape bureau, for that, when finally it gets clear, it is no longer timely, and he demands to know if the duty of the naval bureau is to keep the service disorganized, as at present, or to make it the effective force that the nation demands. In France there are complaints from all sides that a tediously prolix official formality serves to render the best exertions of the corps commanders unavailing. As in the English office, the officials—invariably the big ones—drowse over their work, postpone its expedition, or let it drag through one department after another, till finally, when it emerges, it is either too late for its purpose or has lost the only features that made it valuable.

A Russian naval officer has written a little book concerning Russia's probable action in the event of war with Great Britain, which, now that it is translated, is creating much comment in the English military journals. The author has, it is evident, informed himself as to the events of our civil war, especially regarding the effective work accomplished by the rebel corsairs Alabama, Georgia, and Florida, for it is in like manner he would prey upon the British mercantile marine. He refers, no doubt, to ships of the Vladimir type, which Russia is now building, when he says that, at the first lowering of the war cloud, Russia would dispatch fast, unarmored, light batteried cruisers to various distant ports on the great commercial highways, and, being informed by cable at the earliest moment after war was declared, take the seas after British ships. He looks over the roll of British war ships, and finds not one among the number that could catch the Azov, which has made over 20 knots an hour in ordinary seas, and can do still better in smooth water, and pertinently inquires what Britain could do to prevent the loss of her commerce. He estimates that the Russian cruisers would take or burn seven British ships a day on the average for the first few months.

A French writer compares the French fleet with the Italian, and bitterly complains that, though spending 200 millions a year on her navy, against 60 millions by the Italians, the latter are quite as strong numerically and have more big armored ships (*cuirassés*). He doesn't say anything about speed, coal capacity, and the like, nor how often the eight great battle ships Italy keeps in the Mediterranean require repairing. Recent experience with the big ships of the British navy—and they are as good as any—shows that, in heavy weather, they are awkward, often to unmanageableness, and that it is hazardous to let them maneuver in company. The test of a ship now is What can she do? instead of How heavy are her sides and battery? Speed and coal-carrying capacity are considered first with expert naval authorities now.

The big British war ship Imperieuse, a ten gun cruiser of the first class, is now under inspection, being practically useless at sea because she won't mind her helm under steam, "and with any wind requires a great deal of weather helm, as much as two turns having been needed with a fresh breeze abeam."

The corps of mounted infantry (*chasseurs à pied*) has been reorganized by the French general staff, and now follows that admirable system of tactics which was devised by our General Sheridan. The underlying principle is to make the horseman a trooper as well as a foot soldier, and though fighting on foot is his vocation, and the horse a means of hurrying him along, yet on occasion to be able to dash on an exposed flank of the enemy with the same impetuosity and effectiveness as a regular trooper.

A Remarkable Naphtha Spring in Baku.

According to the *Engineering and Mining Journal*, one of the largest naphtha fountains yet known has lately broken out near Baku, which threatens to inundate all Balakhani. The naphtha, owing to the pressure of the gases which accompany it, rises to a height of from 280 to 420 feet, and is carried away by the wind to a great distance, falling like fine rain at the more distant parts of the district, but near the fountain coming down in torrents that form rivers and streamlets. Further on it falls like sleet, and settles in a layer on all the buildings in the neighborhood. These naphtha rivers flow for a distance of more than half a mile, and pass through wells, works, reservoirs, and inhabited houses, etc. Unfortunately, all the reservoirs in the neighborhood were full when the fountain broke out, and the oil was thus wasted. Owing to the stillness of the atmosphere, at one time the gases which accompany the naphtha spread in a heavy layer for more than 280 yards, filling the houses and placing their inhabitants in a most dangerous position, especially at night, when fires were lit. The sand and dust thrown up by the fountain form a hill of considerable size, and have buried the boiler house of the mining company's works and all buildings in close proximity to the fountain. There is no doubt that any exposed flame would set the whole district from the mining company's works to the Sabounchi railway station in a blaze. Many efforts have been made to stop the spring, but all have as yet proved unavailing, for after five or six hours the fountain would again burst forth with all its former vigor. For some days the fountain has been left to play without hindrance, and has increased in power. In consequence of a strong and changing wind setting in, the naphtha has been scattered in every direction, turning the whole district into a petroleum swamp. The naphtha pours from the roofs of the houses, on to which also fall the earth and stones carried up by the oil.

The Retirement of Prof. Maria Mitchell.

Miss Maria Mitchell, for many years Professor of Astronomy at Vassar College, Poughkeepsie, N. Y., and the first incumbent of that position, has resigned the professorship. For twenty-two years she has taught astronomy in that institution. She was born in Nantucket, Mass., Aug. 1, 1818, and there began her astronomical work at the age of eleven years, by assisting her father in observing a lunar eclipse. In 1847 she discovered a comet, and this made her fame, the King of Denmark giving her a gold medal in honor of the achievement. She has since added seven other comets to her list, being the first discoverer of all of them. She visited Europe shortly after 1847, and was there the guest of Sir John Herschel and Sir George Airy, then Astronomer Royal at Greenwich. She holds the degree of LL.D. from three institutions, the last being granted by Columbia College. She is one of the glories of Nantucket, the natives of that island being very proud of its distinguished daughter. Her resignation was prompted solely by a desire for rest, which was needed on account of her advanced age.