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### ASTRONOMICAL PHOTOGRAPHY AT THE PHOTOGRAPHIC SOCIETY.

At the first meeting of the Photographic Society in its new rooms last Tuesday, Mr. Maunders read one of the most interesting papers which has been brought before the members for some time past; its subject was "Astronomical Photography." Lantern photographs in large numbers were used to illustrate the remarks of the speaker.

Among the more curious facts brought under the notice of the meeting, was the aid which photography has given in determining the velocity of some of the so-called fixed stars. Assume a star to be motionless, and to be emitting waves of light, a certain number of those waves will enter the eye in a second; suppose that star next to be approaching the spectator at high velocity, it is plain that more waves will enter the eye in a second, and if the star were to recede at high velocity, fewer waves would enter the eye in a second. This approaching or receding causes a slight shifting of the position of lines in the spectrum of the light of the star, which shifting can be both measured and photographed, and slides showing the results thus obtained by photography by the German astronomer, Vogel, had their images projected upon the screen at last Tuesday's meeting.

Vogel has given much attention to the variable star Algol, in the Head of Medusa. For a consecutive period of eight hours during about every three days, this star diminishes in brilliancy, and many have been the speculations as to the cause thereof. One of them was that possibly a planet revolving around Algol passed between the observer and that sun. Another was that dark spots of large size on Algol faced our earth at regular intervals as the star revolved upon its axis. A third was that some of the variable stars might be moving in an orbit of great elongation, so that when in one position less light reached the eye of the spectator. In regard to Algol, it is now clear that the falling off of the light is due to some dark body coming between the star and the earth, and recent researches on the lines we have already stated

have proved Algol to have a relative orbital motion of its own. The result of Vogel's researches is, that he has been able to give the size and the weight of the planet revolving around Algol, although the planet has never been seen, and probably never will be visible to the human eye.

The stars are suns more or less like our own sun, but appear small because of their immense distance, a distance so great that it takes some years for the light to travel from even the nearest of them to the earth; consequently, when we gaze at the heavens by night, we see the stars, not as they are now, but as they were some years ago. As our own sun has a few large planets revolving around it, the natural assumption is that the other suns possibly also have planets revolving around them, but that these dark little bodies should become visible to us at the vast distance of the fixed stars seems to the scientific world to be for ever impossible.

Photographs of the sun and of various solar phenomena were exhibited, including some magnificent representations of sun spots, and of the general mottling of the solar surface. In this, as in most other cases, the speaker did not stop to explain the supposed causes of the facts pictured, or his paper would have been of increased interest; time was short, and his lantern slides were many. A popular scientific theory of the cause of the spots on the sun is, that they are due to the down-rush of a comparatively cool absorbing atmosphere. The heat of the sun is so great that even metals are raised into the gaseous state, and these gases, when somewhat cooled, are supposed to shower down towards the centre of the sun as luminous molten rain.

Various photographs of the great nebula in Orion—some taken by Mr. Common, and others by Mr. Roberts—were also projected upon the screen; the best photograph obtained by Mr. Common was not among them, but the set included one not far short of it in quality. The distance of this nebula is so great, that one astronomer has calculated that, if there be no absorption of light in space, the light from the nebula cannot travel to our earth in less than sixty thousand