

in the spectra of solar protuberances and the chromosphere. But far the most striking resemblances exist between these stars and the Novæ. The more they are studied the more almost certain it becomes that they are the faint survivals, the decrepid relics of once brilliant Novæ. Both these stars and the Novæ are found towards the same regions of the stellar system. Although there are indeed one or two exceptions, the Novæ have made their appearance not far from the plane of the Galaxy. Over a hundred Wolf Rayet stars are known to us, and all without exception lie in the milky way, or in those detached portions of it, called the "Nebicula Major" and "Minor." Indeed their partiality for this region is quite as marked, as is the aversion to it on the part of the nebulae. This tendency towards the galactic equator can to a certain extent be accounted for on dynamical principles, by the hypothesis of a rapid rotational motion of the sidereal universe. From the fact of the Novæ and their decrepid descendants the Wolf Rayet stars being found in dense region of the sky, it can be gathered that a certain density is probably necessary for their formation. And this is just what should be expected, since such stars are produced by star encounters. It must be remembered that the real differences of stellar density in the universe vary not as the *apparent* stellar densities, but as the *square* of these apparent densities. Hence star encounters are necessarily vastly more numerous in the denser regions than in the more sparse regions. In any case it is now fairly certain that Novæ, which we maintain later become Wolf Rayet stars, have all been brought into existence by stellar encounters, whether by direct shock or merely by the liberation of internal latent forces due to gravitational strain. The only necessary condition of a "stellar encounter" is considerable deviation of the paths of the two bodies due to mutual attraction. And it can be mathematically shown that for two bodies possessing the mass and density of the Sun, in order to produce a stellar encounter and its consequences, the distance of approach need not be less than 30 times the astronomical unit. It is thus quite clear why the Novæ, and (what comes to the same thing) Wolf Rayet stars, are to be found in the denser regions of the sky.

The Elements of the Comet Wolfe, 1916 b,

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No comet has ever been before discovered when at so great a distance from the Earth, as was the Comet Wolfe. It was discovered last year when at the enormous distance of 4.1

astronomical units away from the Earth, or nearly 380 millions of miles, in the neighbourhood of Jupiter's orbit. It was of course discovered by photography. Its orbit is as follows :

Perihelion Passage (τ)	=	1917 June 16.916.
Longitude of Perihelion (π)	=	303 degrees 45 minutes.
,, of Node (Ω)	=	183 ,, 15 ,,
Inclination of orbit (i)	=	25 ,, 35 ,,
Perihelion distance (Log q)	=	0.22786 = 1.6899
	=	140 millions of miles.

Note on "Sun-spots, maximum solar radiation and diurnal magnetic oscillation in 1916,"

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We give below a table for easy reference and comparison for the latter half of last year :—

	No. of spots.	Max. Radn.	Oscillation.
In June ...	684	1.569	11.1
,, July ...	580	1.550	10.4
,, August ...	267	1.420	11.1
,, September...	478	1.490	9.1
,, October ...	485	1.468	7.5

Note on "The apparent shifting of the axis of Uranus,"

BY REV. A. C. RIDSDALE, M.A., F.R.A.S., F.R. MET. S., M. LOND. MATH. S., F.P.H.S., A.L.C.M., FOREIGN MEMBER OF SOCIÉTÉ ASTRONOMIQUE DE FRANCE.

At the end of 1916 it has been observed that a remarkable change has taken place in the angular position of Uranus' bright zone which probably corresponds to his equator. In 1915 it was in the same plane with his satellites, but now it seems to make an angle of about 25 degrees with this plane. In 1884 it was at 41 degrees, in 1889 at 10 degrees, and in 1894 Premard found it to be at 28 degrees. The flattening of the poles of Uranus greatly exceeds that of Jupiter's poles. At present the apparent shifting of the axis is quite inexplicable.