Atomic Weights of Selenium and Tellurium.—The values obtained by Aston by the mass-spectrum method in the case of selenium and tellurium differ appreciably from those adopted in the International Tables of Atomic Weights. A revision of the chemical determinations has been carried out by Hönigschmid, who reports in *Die Naturwissenschaften* (1932, p. 659) that the analysis of silver selenide gives Se = 78·962 ± 0·002, coinciding with Aston's result, whilst the analysis of $TeBr_4$ gives Te = 127·587 ± 0·019, differing by 0·4 from Aston's value but agreeing with the International value and with a combination of Aston's results with the more recent mass-spectrum experiments of Bainbridge (*Phys. Rev.*, 1021, 1932), which disclosed some new lighter isotopes. A combination of the two spectra gave Te = 127·58 ± 0·15, in correspondence with the chemical value.

Mechanism of Flame Movement.—In the *Journal of the Chemical Society* for July, 1932, Coward and Hartwell, of the Safety in Mines Research Laboratories, describe experiments on the uniform movement of flame in mixtures of methane and air, with particular reference to the effect of the diameter of the tube on the rate of propagation. They confirm the fact that the speed of flame increases with increase in tube diameter; in a tube of 100 cm. diameter, a 10 per cent methane — air mixture would be propagated at about 250 cm./sec., whereas in one of 2·5 cm. diameter at only about 65 cm./sec. For tubes between 10 cm. and 20 cm. in diameter, there appears to be an inflection in the curves representing the speed. The authors explain this by reference to the nodular appearance of the flame, which is due to convection in the flame front, and does not occur in tubes of small diameter. The enlargement of the flame surface increases the mass of the gas burnt in unit time, and the speed of flame increases accordingly. Even in the case of downward propagation of flame in wide tubes, these irregularities in the flame front are visible, and the authors plead that 'uniform movement' of flame may be regarded as an early phase of sensibly uniform speed usually observed in the propagation of flame (through a quiescent gaseous mixture) from the open end of a straight tube towards the closed end, but not as resulting from a particular mode of heat transference, representing the normal speed of propagation of flame by conduction of heat.

Astronomical Topics

The Leonid Meteors.—A Science Service Bulletin, by James Stokley, points out that even people who have no astronomical training can do useful work in observing the Leonid meteors. It will help to determine the time of maximum if they count the numbers seen during each hour of the night. If the meteors are too numerous for all to be counted, the count may be limited to a definite region of the sky, bounded by known stars, which should be noted in making a report; a region should be chosen that will remain in sight throughout the watch. An alternative study is that of the brightness of the meteors. The planets Jupiter and Mars, and the star Regulus will be suitable for comparison. Each observer should limit himself to some definite field of work. The most probable nights are those between November 15 and 16, and between November 16 and 17. The moon will prevent observation of faint meteors, but there should be many bright enough to be seen.

The observatories of Kodaikanal and Helwan have been asked to telegraph to the B.B.C. if they see a rich shower, so there is a possibility of receiving warning before the radiant point rises (a little before 11 P.M.). As the rich portion of the shower takes about four hours to be crossed by the earth, it is more or less an even chance that some portion of the rich shower may occur in the interval between 11 P.M. and sunrise. In 1866 the nodes of Tempel's comet and the meteors were practically identical (231° 26′ comet, 231° 28′ meteors). The calculations of the B.A.A. Computing Section give 233° 54′ for the comet's node this year; if we assume the same for the meteors, the maximum would be about noon on November 16. The most hopeful time appears to be just before dawn on November 16. The sun rises at $7^h\ 19^m$ in London.

A Perplexing Variable Star.—The variability of the star R Scuti was discovered by Piggott in 1795, but the law of its variation defied analysis for more than a century. A special study of the star during the period 1911–1931 has been carried on at the Observatory of the University of Michigan, first under Dr. R. H. Curtiss, and after his death by Mr. D. B. McLaughlin. The results are contained in *Publications* of the Observatory, vol. 9, Nos. 9 and 10. It may be described roughly as of the β Lyrae type, with two unequal minima, the average length of the double cycle being 143 days; on the average the B minima occur 62 days later than the A minima. The brightness at maximum is fairly constant at mag. 5 or slightly fainter; that at minimum is very irregular. Sometimes it does not fall below mag. 6, while early in 1925 it fell below mag. 8. The most curious feature is that sometimes the A minimum, sometimes the B minimum, is the deepest; there is a suggestion that these disturbances of sequence occur at intervals of nine cycles, or about 1300 days. The 143-day period is also subject to cyclic variations. The paper does not attempt to give any physical explanation of the star's curious behaviour.

Total Solar Eclipse Observations.—It was mentioned as a 'novel resource' in a paragraph in the columns of "Astronomical Topics" in NATURE of October 1 on the total solar eclipse of August 31, that some parties of observers had dashed by motor cars to places where the clouds were less dense. Dr. Elihu Thomson, director of the Thomson Research Laboratory, General Electric Company, Lynn, Mass., writes: "In observing the eclipse of June 6, 1918, in Colorado, U.S.A., I secured an automobile for the very purpose of following the blue sky, and after making two shifts, reached a high ridge under blue sky just three minutes before totality and had an excellent view in consequence. I believe this process was novel at the time and was referred to in the Harvard Observatory Annals. In the last eclipse, I, with friends accompanying me, repeated the same process and saw the total phase of the August 31st eclipse, which would otherwise have been missed."