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APPLICATIONS are invited for the following appointments, on or before the dates mentioned :--- A demonstrator in civil and mechanical engineering in the Department of Engineering of the University of Leeds-The Registrar, The University, Leeds (Dec. 2). A clinical assistant in the Department of Physio-Therapy of St. George's Hospital-The Dean of the Medical School, St. George's Hospital, S.W.1 (Dec. 7). A lecturer in physics at the Northampton Polytechnic Institute-The Principal, Northampton Polytechnic Institute, St. John Street, E.C.1 (Dec. 10). A woman lecturer in geography at the Leeds Training College-The Principal, Training College, Leeds (Dec. 10). A principal of the Norwich Technical College-The Secretary of Education, 41 St. Giles Street, Norwich (Dec. 10). A director of the Marine Trades School, Suez, under the Egyptian Ministry of Education-The Under Secretary of State, Ministry of Education, Cairo (Dec. 10). A glass blower in the Department of Chemistry of the University of Cape

Town-The Secretary to the High Commissioner for the Union of South Africa, Trafalgar Square, W.C.2 (Dec. 11). A petroleum technologist to the Government of Trinidad-The Private Secretary (Appointments), Colonial Office, 2 Richmond Terrace, S.W.1 (Dec. 20). A professor of social biology at the London School of Economics-The Academic Registrar, University of London, South Kensington, S.W.7 (Jan. 23). A Martin White professor of sociology at the London School of Economics-The Academic Registrar, University of London, S.W.7 (Jan. 24). A head of the Department of Mechanical and Structural Engineering and Building of the Borough Polytechnic Institute -The Principal, Borough Polytechnic Institute, Borough Road, S.E.1. A lecturer in mathematics and geography at St. Gabriel's Training College for Women-Miss K. T. Stephenson, St. Gabriel's College, Cormont Road, Camberwell, S.E.5. A laboratory assistant in the soil chemistry laboratories of the Agricultural Research Station, Amani, Tanganyika Territory-The Crown Agents for the Colonies, 4 Millbank, S.W.1 (quoting M/1797). A lecturer in botany in the University of Reading-The Registrar, The University, Reading. Heads of the pathological and botany divisions of the Rubber Research Institute of Malaya-The Secretary, London Advisory Committee, Rubber Research Institute of Malaya, 2/4 Idol Lane, Eastcheap, E.C.3.

Our Astronomical Column.

Changes on Jupiter .--- The planet Jupiter will be in opposition to the sun on Dec. 3, and promises to exhibit some very interesting phenomena to observers. Mr. A. Stanley Williams, Rev. T. E. R. Phillips, and others have reported the appearance of a long stream of dark spots in the region immediately south of the north temperate belt of the planet. On Nov. 16 the spots extended over about half the circumference, for $\dot{M}r$. Phillips found that they occupied 5 hours in crossing the central meridian. This outburst of spots has appeared in the same latitude and presents a similar aspect to that shown by a remarkable train of spots which attracted much attention in October and November 1880. The latter objects gave a rotation period of 9^{h} 48^{m} and formed a new dusky belt on the planet in 32 days. They were among the swiftest markings ever detected on the Jovian surface. The present revival of similar details is very suggestive of repetition, for the spots at present visible are travelling with great rapidity of movement and complete a rotation in about 9h 49m. They are being attentively watched in order to determine whether or not they become transformed into a new belt as occurred with the markings of 1880.

The Binary Star 70 Ophiuchi.—It has long been known that the discordances between theory and observation in the distances and position angles of this star are of a somewhat systematic nature; some of the orbit computers have considered that there was evidence of a third unseen component disturbing the motion of the others; an alternative explanation was that the discordances arose from systematic errors in the observations, depending on the inclination to the vertical of the line joining the stars. It is known that some observers have personal errors of this nature, and R. Tschilschke examines in *Astr. Nach.*, No. 5664, whether the discordances can be

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explained in this way. He concludes in favour of the existence of a third mass from the fact that the discordances have a different period from the period of revolution of the visible pair; he finds 89.09years for this, but about 64 years for the discordance. He concludes also that the node shows a yearly change of some 2°, indicating that the third body moves in a plane different from that of the visible system.

The Star-cloud in Scutum -Lick Bulletin, No. 416, consists of an examination by C. J. Krieger of the distance and depth in the line of sight of the galactic star-cloud in Scutum (now generally included in Aquila). The centre of the cloud is at about R.A. 18^{h} 43^{m} , S. Decl. 7.6° (equinox of 1900). The spectral types of the brighter stars were obtained by ditlege spectra to be to explain the property of the spectral types of the brighter stars were obtained by slitless spectrograms; the photographic magnitudes by comparisons with the north polar sequence; the colour indices by photographs with colour filters. The cloud is approximately 6° by 8° in angular area; its mean distance is determined as 2800 parsecs, which makes its mean diameter in a direction perpendicular to the line of sight 350 parsecs; the depth in the line of sight appears to be greater, being between 500 and 1000 parsecs. The relative luminosities of the different spectral types are the same as in the neighbourhood of the sun, but the density of distribution of dwarf stars is considerably greater. There is concluded to be a region of low star density between the solar cluster and the Scutum Cloud. Other estimates of the distance of the cloud are : Seares, 7000 parsecs; Shapley, 4000 to 6000 parsecs; Kreiken, 1500 par-secs; Malmquist, 3400 parsecs. The mean is 4200 parsecs, or 1.5 times Krieger's estimate. The study of the distance of these galactic condensations is of interest for comparison between them and the condensations in the spiral nebulæ.