corresponding neutral atoms occur in the same spectral region and are very strong when the star is fainter than one magnitude below maximum. The rapid increase in such ratios as $LaII\ 7066/LaI\ 7068$ as R Gem passes a magnitude of about 7.5 on the way to maximum indicates that at an effective temperature of the order of $2800^\circ K$ much of the lanthanum is already ionized. This is consistent with the low ionization potential (5.61 e.v.) of LaI , and explains the sudden disappearance of the bands of LaO at about the same temperature. On the other hand, the ZrO bands persist to a higher temperature even though the two molecules are probably of comparable stability. This difference is due to the higher ionization potential (6.95 e.v.) of ZrI .

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Ko, H. C. and Kraus, J. D. A new radio map of the sky and a model of the galaxy.

A new radio map has been prepared covering nearly all of the sky observable from Columbus, Ohio. The map was made with the Ohio State University 96 helix radio telescope at 250 Mc/s. The antenna has a beam width of 1.2° in right ascension and 8° in declination between half-power points. The new map combines and extends maps of parts of the sky made previously at Ohio State. It is also more accurate. The map covers 85 per cent of the sky observable from latitude 40° north, which represents about 75 per cent of the entire sky.

The distribution of cosmic radio background radiation shows a high concentration in the galactic plane and toward the galactic center. The maximum or ridge line of the background radiation shows a significant bias to the south of the galactic equator at most galactic longitudes.

The positions of numerous intense localized and extended radio sources are also shown in the map. Very large radio complexes are also indicated in the regions of Cygnus, Orion, and Vela.

An analysis of the present high resolution survey shows that it is difficult to interpret the observed galactic radio radiation merely in terms of emission from a system of radio sources distributed like common stars. It appears instead that the galactic radiation may consist of three distinct subsystems: (1) a narrow belt about 3° wide lying in the galactic plane and concentrated towards the galactic center, (2) a very broad band of radiation concentrated within about 15° of galactic latitude, and (3) an approximately spherical distribution. The first component indi-

cates a predominantly thermal origin, while the other two are non-thermal.

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Columbus, Ohio.*

Koomen, M. J., Scolnik, R. and Tousey, R. Measurements of the night airglow from a rocket.

Photometers designed to measure the altitude and intensity of the 5577A and the 5890-6A airglow emission lines were flown in an Aerobee rocket on the night of December 12, 1955. Each photometer consisted of an RCA 1P21 multiplier phototube, a lens and aperture system to limit the field of view to 5 degrees, and a multilayer interference filter of 20A bandwidth to isolate the wanted spectral region. A photometer was also provided to measure the light in the region of 5300A where the airglow is relatively weak. Preliminary results indicate that the 5577A and 5890-6A emissions arose at roughly the same level. The 5890-6A emission originated in a layer whose maximum intensity occurred at about 84 km; no emission was observed below 70 km or above 100 km. In the case of the 5577A radiation the layer had a maximum intensity at about 96 km, with little emission occurring below 80 km or above 115 km. The airglow contribution to the total light measured by the 5300A photometer arose between the altitudes 80 and 115 km, and seemed somewhat more evenly distributed with respect to altitude than were the 5577A and 5890-6A emissions. Maximum intensity was at about the 100 km stratum.

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Kraus, J. D. Some observations of the impulsive radio signals from Jupiter.

The discovery by Burke and Franklin (1955) of radio emissions from Jupiter has opened a new field of radio astronomy. At the Ohio State University observations have been made of the Jupiter signals at 26.6 megacycles per second using an interferometer consisting of two corner reflector antennas, each having 6 colinear half-wave dipoles as the active element.

The Jupiter signals consist of bursts of short duration which are suggestive of an electrical discharge phenomena similar to terrestrial lightning. Jupiter signals with a peak power flux several times the value for the strong Cassiopeia A radio source are often recorded which indicates