THE ASTRONOMICAL JOURNAL

PUBLISHED BY THE AMERICAN INSTITUTE OF PHYSICS
FOR THE AMERICAN ASTRONOMICAL SOCIETY

VOLUME 67

1962 November ~ No. 1304

NUMBER 9

Abstracts of Papers Presented at the 111th Meeting of the American Astronomical Society, held August 26–29, 1962, at Yale University, New Haven, Connecticut

Revised Abundances of Some Metals in the Sun. LAWRENCE H. ALLER, *University of Michigan*.—At the National Bureau of Standards, C. Corliss has recently measured approximate f values for a large number of metallic lines in a copper arc, thus providing a large body of homogeneous data for many transitions of neutral atoms and ions that are of astrophysical interest. These transition probabilities have been used in conjunction with a previously published model atmosphere (cf. Goldberg, Muller, and Aller, *Astrophys. J. Suppl.* 45) to derive new estimates of the abundances of certain metals, viz.,

Logarithms of numbers of atoms, $\log N(H) = 12.00$							
<i>Na</i>	5.44	<i>Ga</i>	2.51	<i>Nb</i>	2.30	<i>Cd</i>	1.66
<i>K</i>	4.66:	<i>Ge</i>	2.49	<i>Mo</i>	2.30	<i>In</i>	1.28
<i>Sc</i>	2.80	<i>Sr</i>	2.70	<i>Ru</i>	1.82	<i>Sn</i>	2.05
<i>Cu</i>	3.50	<i>Y</i>	3.20	<i>Ro</i>	1.37	<i>Sb</i>	0.42
<i>Zn</i>	3.52	<i>Zr</i>	2.65	<i>Pd</i>	1.27	<i>Ba</i>	2.50
				<i>Ag</i>	1.04	<i>Yb</i>	2.28

This project was sponsored in part by the U. S. Air Force monitored by the Air Force Office of Scientific Research of the Air Research and Development Command.

Atmosphere of 53 Tauri. L. H. ALLER AND W. P. BIDELMAN, *University of Michigan*.—The chemical composition of the manganese star 53 Tauri is studied with the aid of data secured with the coude spectrograph of the 120-inch reflector at the Lick Observatory. Transition probabilities required for the problem are obtained from laboratory sources whenever possible but some are obtained by the calibration of stellar data. The temperature of the star, deduced from ionization equilibrium, is near 11 000°K—a value in good agreement with that found from spectral energy scans by Jugaku and

Sargent. The electron pressure in the atmosphere, deduced from the total intensities of hydrogen lines appears to lie in the neighborhood of 500 dyn cm⁻². Several striking abundance anomalies are found; they cannot be explained by deviations from local thermodynamic equilibrium. Manganese seems to be the most abundant metal in the star, but gallium appears to show the greatest enhancement of abundance over the “normal” value. Strontium, yttrium, and zirconium are also enhanced in abundance, while magnesium, silicon, and calcium seem to be depleted.

Element	Log N	Element	Log N
<i>H</i>	12.00	<i>Cr</i>	4.49
<i>C</i>	9.03	<i>Mn</i>	6.88
<i>Mg</i>	6.77	<i>Fe</i>	6.33
<i>Si</i>	6.80	<i>Ga</i>	5.1
<i>Ca</i>	4.66	<i>Sr</i>	4.20
<i>Ti</i>	5.53	<i>Y</i>	3.74
		<i>Zr</i>	4.20

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Contribution to the Theory of Critical Inclination of Close Earth Satellites. SHINKO AOKI, *Goddard Space Flight Center*.—Recently many authors have shown interest in the critical inclination problem of close satellites. Almost all have treated only the leading terms, which are of the order of $(J_2)^2$ in the equations of motion. But, as first shown by Izsak, continuation to higher approximations from the ordinary treatment of libration, including only leading terms, could break down; and a peculiar kind of libration would then occur, especially in the case of small eccentricity. Izsak discussed the results only