Radio Survey of Shapley-Ames Galaxies. D. S. HEESCHEN AND C. M. WADE, *National Radio Astronomy Observatory*.—A radio Survey at 750 and 1400 Mc/sec of all galaxies in the Shapley-Ames Catalogue north of declination $-19^{\circ}23'$ (1963.0) is in progress with the 300-ft telescope. The survey is essentially complete down to a photographic magnitude of 11.5 and a radio flux density of $0.5 \times 10^{-26} \text{ W m}^{-2} (\text{cps})^{-1}$. Radio sources have been detected at the positions of more than half of the Sb, Sc, and Ir galaxies brighter than $m_{pg} = 11.0$. A preliminary analysis of the relationships between the radio and other properties of galaxies is presented.

The National Radio Astronomy Observatory is operated by Associated Universities, Inc., under contract with the National Science Foundation.

Photographic Photometry (*U, B, V*) of Two Stellar Groups near NGC 2244. ARNOLD M. HEISER, *Dyer Observatory*.—Photographic magnitudes in three colors (*U, B, V*) have been determined for two groups of stars within one degree of the galactic cluster NGC 2244. Photoelectric observations of some of the stars in this cluster (Johnson, H., *Astrophys. J.* 136, 1135, 1962) were used as standards for the photographic material, all of which was obtained with the Dyer Observatory 24-inch reflector-corrector. Color luminosity arrays have been used in an attempt to determine not only the reality of these two groups but also their possible relation to NGC 2244.

Emission-Line Stars in an Obscured Region in Chamaeleon. KARL G. HENIZE, *Dearborn Observatory*.—In the course of the Michigan-Mount Wilson southern $H\alpha$ survey a group of ten emission-line stars were found in an obscured area in Chamaeleon centered on R.A. $11^{\text{h}}04^{\text{m}}$, Dec. $-76^{\circ}5'$ (1875) (Henize, thesis, 1954). Hoffmeister (*Trans. IAU XIA*, 268, 1961) has found a concentration of RW Aurigae type variables in this same region. A search for emission-line stars on objective-prism plates taken with the Uppsala Schmidt telescope at Mount Stromlo Observatory has been completed to mag. 15.0. Within an area of two square degrees 27 stars with certain $H\alpha$ emission and six with probable $H\alpha$ emission have been found. Of these 33 stars, 12

show irregular light variations and 5 are probably variable.

Slit spectra have been obtained of the five brightest members with the Mount Stromlo 74-inch reflector. Classifications together with preliminary photometric data are given in Table I.

Assuming HD 97300 to lie on the zero-age main sequence the apparent modulus of the group is 7.4, the true modulus is 6.2, and the distance is 170 pc. Although the spectrum of LH α 332-21 is T Tauri like in that strong hydrogen emission through $H12$ is visible together with strong H and K emission, it does not completely qualify as a T Tauri star since neither $Fe\text{ I}$ nor $S\text{ II}$ emission is present. However, there seems little doubt that many of the fainter stars will be found to be typical T Tauri stars and that this group may be classed as a T association.

This research has been supported by Office of Naval Research Contract Nonr-1228(19).

Search for Residual Traces of the T Tauri Phenomenon in Normal Stars: Lithium in G-Type Dwarfs. G. H. HERBIG, *Lick Observatory*.—A lithium abundance a few hundred times the solar value appears to be characteristic of the T Tauri stars. In present models of contracting stars near $1 M_{\odot}$, the effective depth of the convection zone passes through a maximum during contraction. Therefore if Li present initially is to be destroyed, this must happen before the star reaches the main sequence, since the convection zone in models of the present sun does not extend deep enough to have produced the observed depletion of Li in 5×10^9 years. Consequently, the Li abundance in main-sequence stars of about $1 M_{\odot}$ should be comparable with the solar value.

This expectation is not fulfilled. The Li abundance in some 50 G0-G8 dwarfs near the sun shows a major dispersion, from values comparable with the T Tauri stars down to values like that of the sun.

Evidence that this is an age effect (in the sense that the Li abundance decays with time) is:

(i) All six G0-G4 dwarfs that have been observed in the Hyades (age: 5×10^8 yr) have moderately strong Li ; their mean Li/Ca ratio is about 30 times the solar value (see following abstract by Wallerstein, Herbig, and Conti).

(ii) The brightest G dwarf in the Pleiades (age: 6×10^7 yr) has a comparable Li abundance.

(iii) The relative numbers of G dwarfs in the solar neighborhood as a function of Li abundance, on the assumption of a constant rate of formation over the past 15×10^9 yr, are in approximate agreement with expectation from a simple theory of Li decay.

(iv) The stars with the strongest Li lines all have low space velocities. The velocity dispersion increases to lower Li abundances.

TABLE I. Classifications and preliminary data.

Star	Spectrum	<i>V</i>	<i>B</i> - <i>V</i>
HD 97048	A0e α	8.44	+0.36
HD 97300	A0V	8.98	+0.41
CPD - 76°652	G11ep	10.60	+1.18
LH α 332-21	G8e	10.94	+1.11
LH α 332-20	K0e	11.3	...