the Pleiades (previously detected by Heesch and Drake), Coma Berenices, and Praesepe. No neutral hydrogen has been detected in M67. A strong age effect is shown in the cluster neutral-hydrogen content, the youngest clusters having about as much *HI* as stellar mass, with the ratio *HI*/stellar mass decreasing with increased age until the ratio is zero in M67. The total mass of hydrogen found in each cluster is consistent with the total mass of protostars predicted by theory, the agreement becoming very good in the older clusters. The absence of interstellar lines connected with the cluster hydrogen, the low cluster escape velocity, and the probable existence of interstellar winds militate strongly against the cluster neutral hydrogen being an extended residue of cluster formation, or extended material ejected from cluster stars, and demand that the cluster neutral hydrogen occur in compact bodies. Both theory and observation, then, support the thesis that the neutral hydrogen observed is in the form of cluster protostars.

Accurate frequency profiles obtained for the Pleiades and Praesepe are almost identical in form, and resemble typical line profiles broadened by collisional damping. If the line broadening is interpreted as pressure broadening, densities of the order of 10^{14} atoms/cc are indicated, requiring the radiating bodies to be highly flattened if high optical depth and very large deduced hydrogen masses are considered unreasonable.

Harvard College Observatory,
Cambridge, Mass.

Gehrels, Thomas. The Indiana asteroid program.

A program of photographic asteroid observations made with a 10-inch *f*/6.5 Cooke triplet was initiated by Dr. F. K. Edmondson in 1949. The purposes are fourfold: recovering asteroids that are far from their predicted positions; finding positions, for new orbit calculations or revision of old ones; since 1956, deriving magnitudes accurate to about 0.1 mag; and training of students. Since 1949, about 3500 plates have been taken showing 12,000 asteroid images, some 2000 accurate positions have been published in the *Minor Planet Circulars*, and 18 students have worked on the program. The limiting magnitude is $P_0 = 17.3$, reached by allowing for the asteroid motion in the guiding, with exposures of about 50 minutes on the average. With the existing plates magnitudes

are now being determined to study aspect variation. New photographic magnitudes for some 200 asteroids that could not be reached in the Yerkes Survey will be proposed to the next IAU meeting as a revision of the present values in the *Ephemerides*.

Goethe Link Observatory,
Indiana University,
Bloomington, Ind.

Hoffleit, Dorrit. Some peculiar variables in Sagittarius.

In Variable Star Field 193 in Sagittarius some 270 of the 600 discovered variable stars have a range exceeding two magnitudes. For 135 of these, long periods are either given in the *General Catalogue of Variable Stars* or have subsequently been determined. Eleven are novae and ten, not including four new RV Tauri-type stars, are apparently irregular. The remainder have not yet been sufficiently observed for the determination of periods or types.

The 10 irregular variables are tentatively classified as three R Coronae Borealis-type, two U Geminorum, two cataclysmic of either the nova or U Geminorum-type, one flare-like star, one semi-regular star with cycles of about 32 days, and finally, one peculiar star (at $18^h 31^m 37^s$, $-20^\circ 58' 3$, 12.2–15.8 mag.) somewhat resembling V Hydrae: cycles of a few hundred days are superposed on two long cycles of about 5000 days.

The flare-like star ($18^h 32^m 44^s$, $-21^\circ 48' 7$), usually fluctuating between 14 and 15 mag., was found at 12.6 and 12.9 mag. on the last two of a series of five 45-minute plates taken on August 21–22, 1928. Mrs. Jean Anderson examined the star on 680 Harvard plates and found no other bright maximum.

It may be of interest that three of the 38 stars heretofore assigned to the R Coronae Borealis-type are in this 8×10 degree field. MV Sgr, whose type had not previously been determined, is found to belong to this class.

Yale University Observatory,
New Haven, Conn.
and Maria Mitchell Observatory,
Nantucket, Mass.

Howard, William E. III. A study of stellar association I Lacertae.

Near the OB association I Lacertae 21-centimeter observations show an excess of neutral hydrogen which in projection on the sky appears