The outlying members are also primarily main sequence stars with no stars in the cluster earlier than Ao. The cluster also probably contains an Mo giant, six late G giants, two early F giants, and four peculiar stars.

Dynamical considerations. If the distribution of velocities near the sun were actually random, 575 of the stars in the *Bright Star Catalogue* within a hundred parsecs would have speeds within 4 km/sec of the cluster speed. However, only four of these would be moving within 10° of the direction of the cluster motion.

A calculation of the effect of stellar encounters shows that a cluster star will probably change its kinetic energy with respect to the nucleus of the cluster by less than 20 per cent in 3×10^9 years. This means that the life time of the cluster is of the same order as the galactic time scale.

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Sawyer, Helen B. Méchain's additions to Messier's catalogue.

During the writer's bibliographical compilation on globular clusters, a long-overlooked letter by Pierre Méchain was found in Bode's *Jahrbuch* for 1786. This letter consists of comments by Méchain on his observations of nebulae which had already gone to press as part of Messier's catalogue in the *Connaissance des Temps* for 1787. Méchain says that the nebula Messier 102 does not exist; it was an error. (A number of astronomers have spent time trying to identify this as the spiral NGC 5866.) He also lists four other nebulae which he has discovered, and these should logically be given Messier numbers as follows: NGC 4594 as M 104; NGC 3379 as M 105; NGC 4258 as M 106; and NGC 6171 as M 107. Flammarion, from pencilled notes in Messier's records, has already suggested the inclusion of NGC 4594 as M 104, though this letter published by Méchain was apparently unknown to him.

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Shapley, Harlow. Photometry of Small Cloud Cepheids.

A study of light-curve form, as a correlate of period and absolute magnitude, similar to that made earlier for the Large Magellanic Cloud Cepheids, has now been completed for forty-four variables of the Small Magellanic Cloud. Homogeneity in photometric material throughout a range in period from 1.2 days to 33 days was

obtained by careful examination of the fields on large scale plates (southern 60-inch reflector) for the elimination from the survey of variables that are optical doubles or involved in nebulosity, and by using a single basic sequence of magnitude standards for all variables. The new light curves will be published in detail within a few months and compared critically with the earlier results from the Large Cloud.

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Spitzer, Lyman, Jr. The galactic magnetic field.

The radiation pressure which light from the galactic center exerts on small solid grains tends to give these a drift velocity through the atoms and away from the galactic center. Because of the Coriolis force resulting from galactic rotation, this drift will have a component about the galactic center; since the grains are electrically charged, an electrical current around the galactic center results. The magnetic field produced by this current is much reduced, however, by a number of indirect effects. As pointed out by Follin, the high self-inductance and low resistance for a circumgalactic current results in a very great build-up time, in the neighborhood of 10^{29} years. It may be inferred that any appreciable galactic magnetic field now existing is about equal to the field present when the galaxy was formed. Thus if cosmic ray measurements can provide evidence as to the magnitude of the present field, direct information as to the conditions present at the formation of the galaxy can be obtained.

By a similar argument it can be shown that the build-up time for an electrical current in interstellar space around a circuit an astronomical unit across is very much greater than the time that the sun will move through a similar distance. Hence it follows that if interstellar matter is streaming unimpeded through the solar system, the sun's magnetic field cannot reach the earth. Thus cosmic ray measurements on the effects produced by the sun's magnetic field can reveal whether or not the interplanetary medium is sufficiently dense to ward off the interstellar gas.

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Stokley, James. Polarization of the flash spectrum.

Last May I had the privilege of going to Bocayuva, Brazil, with the U. S. Army Air Forces-National Geographical Society expedition