at these densities will necessarily be tentative. The equation of state of matter at densities very much beyond 10^{15} gm/cm^3 remains largely conjectural. There have been several discussions of Hagedorn-type equations of state at ultrahigh densities (Frautschi et al 1971) yielding very soft equations of state. The main problem in this region is not so much the lack of a reliable method, but rather whether the matter at these very high densities can be described on the basis of phenomenological forces between particles. It may well be sometime before various theoretical proposals pertaining to the behaviour of matter in the density range $2\times10^{14} \ll \rho \ll 10^{16}$ gm/cm^3 arrive at a convergent viewpoint.

References

Anderson, P. W. and Palmer, R. G. 1972, Nature Physical Sciences, **231**, 145.
Banerjee, B., Chitre, S. M. and Garde, V. K. 1970, Phys. Rev. Lett., **25**, 1125.
Baym, G., Pethick, C. J. and Pines, D. 1969, Nature, **224**, 673.
Baym, G., Bethe, H. A. and Pethick, D.J. 1971, Nucl. Phys. **A 175**, 225.
Baym, G., Pethick, C. J. and Sutherland, P. 1971, Ap. J., **170**, 299.
Bolton, C. T. 1972, Nature, **235**, 271.
Buchler, J. R. and Barkat, Z. 1971, Phys. Rev. Letts., **27**, 48.
Canuto, V. and Chitre, S. M. 1973, Phys. Rev. Letts., **30**, 999.
Clark, J. W. and Chao, N. C. 1969, Nuovo Cimento, **2**, 185.
Clark, J. W. and Chao, N. C. 1972, Nature Phys. Sciences, **236**, 31.
Coldwell, R. L. 1972, Phys. Review, **D5**, 1273.
Dyson, F. 1972, Proceedings of the Sixth Texas Symposium on Relativistic Astrophysics, New York.
Frautschi, S., Bahcall, J. N., Steigman, G. and Wheeler, J. C. 1971, Comments Astrophy. Spac. Phys., **3**, 121.
Greenstein, G. 1970, Nature, **227**, 791.
Lamb, F. K., Pethick, C. J. and Pines, D. 1972, Proceedings of the Sixth Texas Symposium on Relativistic Astrophysics, New York.
Landau, L. 1932, Phys. Z. Sowjetunion, **1**, 285.
Langer, W. D., Rosen, L. C., Cohen, J. N. and Cameron, A. G. W. 1969, Astroph. Space Scinece, **5**, 259.
Migdal, A. B. 1972, Sovt. Phys. JETP, **34**, 1184.
Negele, J. W. and Vautherin, D. 1973, Nucl. Phys., A **207**, 298.
Nosanow, L. and Parish, L. 1972, Proceedings of the Sixth Texas Symposium on Relativistic Astrophysics, New York.
Oppenheimer, J. R. and Volkoff, G. M. 1939, Phys. Rev., **55**, 374.
Pandharipande, V. R. 1971, Nucl. Phys., **A 174**, 641.
Pandharipande, V. R. 1972, Proceedings of the Sixth Texas Symposium On Relativistic Astrophysics, New York.
Pines, D., Shaham, J. and Ruderman, M. 1972, Nature Physical Sciences, **237**, 83.
Ravenhall, D. G., Bennett, C. D. and Pethick, C. J. 1972, Phys. Rev. Lett., **28**, 978.
Sawyer, R. F. and Scalapino, D. J. 1973, Phys. Rev., **D7**, 953.
Schiff, D. 1973, Nature Physical Sciences, **243**, 130.
Tsuruta, S. and Cameron, A. G. W. 1963, Canad. J. Physics, **43**, 2056.

Brief Report on the 13th International Cosmic Ray Conference, Denver, Colorado, August 17-30, 1973

The invited lectures of astrophysical significance were by Pacini on Collapsed Objects, Reeves on Nucleosynthesis and Cosmic Rays, Gursky on New Developments in X-Ray astronomy, J. Geiss on Solar Wind Composition and History of Solar System, A. Hundhausen on Solar Magnetism, Corona and Solar Wind, Ostriker on Cosmic Acceleration Processes and Burbidge on Interstellar and Intergalactic Media. Pacini talked mainly about the oblique rotator model of pulsars. Gursky discussed the nature of galactic binary sources (speculating on whether we have detected a black hole), extragalactic sources and the present status of X-ray back-ground. Burbidge mentioned that the X-ray background does not present such an obstacle to the Gold-Hoyle Hot-Steady-State Universe, as it first seemed to do in the mid-sixties. Burbidge talked mainly about what constitutes the intergalactic medium—e.g. neutrinos, high energy cosmic rays, gravitational radiation, electromagnetic radiation at various wave-lengths, smoothed out distribution of matter and black holes. It seems if QSOs are not distant, we can fill up the medium with neutral hydrogen upto 10 percent of critical cosmological density required to close the universe. But it seems difficult to reach that value $\sim$ 4.7. 10^{-30} gms cm^{-3} on the present data. He mentioned another very recent unpublished observation on QSOs. Hazard's position measurements have led to identification of a 4C-source with a QSO of 17th mag at z=0.45. Within 5″ of that is another QSO with z=1.4. Also an emission line of Mg at z=0.45 coincides with an absorption line at z=1.4 of Mg. There are also emission lines of C IV common to both. This suggests they are related and their redshifts are not cosmological. The lectures on solar wind etc. mainly tried to build a self consistent picture of the solar magnetic field and charged particle motion.

There were contributed papers of various types grouped in a number of parallel sessions subjectwise—origin, airshowers, techniques, solar modulation, muons, high energy, etc. There was a Sarabhai Memorial session at which U.R. Rao (Chairman), M. G. K. Menon, B. Peters, B. Rossi spoke and a message from P.M.S. Blacket was read out.

J. V. Narlikar

Tata Institute of Fundamental Research Bombay 400 005.