Session 52: Groups & Clusters of Galaxies

52.20
X-Ray Emission from UGC6697 in the Cluster of Galaxies A1367
A. Fruscione (Institut d'Astrophysique de Paris),
G. Gavazzi (Istituto di Fisica Cosmica, Milano)

We present the analysis of two overlapping HRI observations of the cluster of galaxies A1367 which led to the detection of an X-ray source associated with the peculiar/irregular galaxy Zw97-087 (UGC6697), previously undetected in the individual fields. The galaxy has a 0.2–4 keV X-ray luminosity of $3.25 \times 10^{41}$ erg/sec, assuming a distance of 128 Mpc. This luminosity can be contributed by discrete X-ray sources associated with the young stellar population resulting from the enhanced star formation activity observed in this very blue peculiar galaxy. Comparison with a sample of spiral-irregular galaxies (Fabbiano, Gioia and Trinchieri 1988) shows the continuity between the multiwavelength properties of 97087 and those of galaxies of similar spectral type. This favors the association of the observed X-ray emission from 97087 with the plausible population of massive binary stars in the disk of this Irregular galaxy.


Session 59: WGAIT

59.04
Advanced Imaging System and the Ford 2K x 2K CCD
W.V. Schemp, P.E. Doherty, G. Sims
(Advanced Technologies, Division of Photometrics)

We will discuss the operation of the Advanced Imaging System (AIS), a smart CCD camera controller being built by Advanced Technologies, a division of Photometrics. We will also discuss our early experiences in using the AIS to image with the Ford 2K x 2K CCD.

Session 68: Clusters and Associations

68.13
The Effects of Internal Stellar Rotation on Age Estimates for Globular Cluster Stars
C.P. Deliyannis, P. Demarque, and M.H. Pinsonneault
(Center for Solar and Space Research, Center for Theoretical Physics, and Department of Astronomy, Yale University)

We have constructed evolutionary sequences for low metallicity stars ($0.001 \geq Z \geq 0.0001$) to study the effects of internal stellar rotation on the evolutionary timescales in the pre-main sequence, the main sequence (MS), and around the MS turnoff. Although a substantial amount of angular momentum remains in the interior, rotation is only a minor perturbation on the structure and ages of globular cluster stars. Even models with large initial angular momenta have MS lifetimes that are within 1% of those of standard models of the same mass and composition. Therefore, rotation does not affect age estimates of globular clusters from isochrone fitting. Furthermore, our models suggest that because rotation is not likely to affect horizontal branch (HB) morphology, it does not affect significantly age estimates from the AV method. Thus, the ages of the oldest known clusters remain at $17 \pm 2$ Gyr. This work is also compatible with age being the second parameter in HB morphology. Even though rotation does not affect the ages, it is important in other contexts. On the giant branch, it will mix CNO processed material to the surface, and it might explain the observed CNO anomalies. In addition, our models naturally exhibit strong differential rotation with depth. The internal angular momentum in the models is consistent with observations of surface rotational velocities on the HB, which require the preservation of a large reservoir of internal angular momentum.

Session 70: Planetary Nebulae and Supernova Remnants

70.20
A newly discovered carbon poor planetary nebula: PN 242-37.1
S. Torres-Peimbert, M. Peña (Instituto de Astronomía, U. N. A. de México), M. T. Ruiz, and J. Maza (Departamento de Astronomía, U. de Chile).

A very high excitation planetary nebula has been discovered at coordinates $\alpha = 05^h 01^m 21.791$, $\delta = -39^\circ 49.54.2$ (equinox 1950.0). The corresponding galactic coordinates are $l = 242.72$ and $b = -37.11$. © American Astronomical Society • Provided by the NASA Astrophysics Data System