shielding around the CCD, MOST should be able to satisfy its primary science goals.

Formation d’étoiles massives en régime sous-critique, Mario Lelièvre and Jean-René Roy, Université Laval, and Pierre Martin, Canada-France-Hawaii Telescope Corporation.

La formation stellaire en milieu de forte activité (starbursts) est étudiée depuis déjà plusieurs années. Cependant, les étoiles massives se forment également de façon moins spectaculaire au sein d’environnements qualifiés de sous-critique. Ce régime manifeste de multiples différences par rapport au régime starburst. Entre autres, les régions H II qu’on y retrouve sont généralement plus petites, moins lumineuses et davantage isolées. En plus d’être présent dans les portions externes des disques de galaxies spirales, le régime sous-critique se retrouve au sein des galaxies naines en phase latente, dans les galaxies à faible brillance de surface et probablement dans les systèmes absorbants Lyman alpha. Malgré les connaissances acquises à ce jour, le régime sous-critique demeure bien mal connu et soulève des questions fondamentales sur les mécanismes de formation stellaire dans les galaxies. Nous proposons de caractériser la formation stellaire en régime sous-critique. Pour ce faire, un vaste programme d’imagerie profonde Ha est présentement entreposé sur un grand échantillon de galaxies (spirales, naines, galaxies à faible brillance de surface). Ce programme sera complété par la spectroscopie de plusieurs régions H II situées en milieu sous-critique dans le but de décrire la métallicité et l’évolution chimique dans ce régime.

Numerical Simulations of Protostellar Jets with Multi-Pressure Components from Keplerian Disks, Juan Ramon Sanchez Velar, David A. Clarke, and Rachid Ouyed, Saint Mary’s University.

In an extension to the work of Ouyed & Pudritz (1997a,b), we are using ZEUS-3D (two-fluid MHD solver) in its 2-D mode to launch protostellar jets from Keplerian disks in spherical polar co-ordinates. In particular, we now include the energy equation for an adiabatic fluid, as opposed to specifying the pressure as $P = \rho^\gamma$ directly in the momentum equation as done by Ouyed & Pudritz (1997a,b). This approach allows the study of shocks and contact discontinuities on episodic flows. Additionally, we implement a new fluid variable, Alfven pressure, to evaluate the dynamical impact of Alfvenic turbulent waves, modeled as a polytropic gas (index 1/2) and an adiabatic gas (index 3/2), as discussed in McKee & Zweibel (1995).

References

Superpolarized Dark Dusty Simple Bok Globules [Boks], Jacques P. Vallée, Herzberg Institute of Astrophysics, National Research Council of Canada, Pierre Bastien, Université de Montréal, and Jane S. Greaves, Joint Astronomy Center.

The earliest stages of star formation may harbour well-collimated magnetic field structures. A good test of that is to make polarimetric observations of small isolated dark clouds such as Bok globules, at a wavelength corresponding to optically-thin dust emission (extreme infrared/submillimetre regime). In August 1998 we investigated Bok globule CB068, visible in absorption on the Palomar Observatory Sky Survey 0.6-micron red print with a total size of $7\times7$ arcminutes. We report results on the core of CB068, seen in emission with the James Clerk Maxwell Telescope at 860 microns with a core size of $3\times3$ arcminutes. CB068's dust emission has a linear polarization exceeding 10%, with a magnetic field oriented along the minor axis of the Bok globule (with the position angle of linear polarization along the major axis). Such a high percentage is very remarkable, suggesting a coherent magnetic field structure with little turbulence in the gas, too cold and too young to have a bipolar CO outflow (hence a pre-Class 0 Young Stellar Object). Nearby Boks may well be fantastic laboratories in which to further test star formation theories.

Binary Stars in the Old Open Cluster M67 and Praesepe, Melvin Blake, York University.

The ages of the globular cluster population of the Galaxy help trace the processes that formed the halo of the Galaxy. In a similar manner, old open clusters can be used to trace the star formation history of the Galactic disk. We have obtained photometry and spectroscopy of two contact binaries in the old open clusters M67 and Praesepe, which can be used to obtain independent distance estimates for the clusters. We present preliminary results of work to evaluate the method of obtaining distances to star clusters in such fashion.

Radiative Accelerations in Stellar Atmospheres, Francis LeBlanc and Serge Émile LeBlanc, Université de Moncton.

The main cause of abundance anomalies observed in certain stars is believed to be atomic diffusion induced by momentum transfer to atoms via photoabsorption. The radiative flux selectively pushes the atomic species, which compete for the photons, outward, and thus counteracts gravitational settling. The radiative diffusion of the elements can modify the structure and the evolution of stars and can also lead to stellar pulsation. Precise radiative forces are therefore needed in order to include atomic diffusion in stellar modeling. Several recent studies have concentrated on the radiative forces in stellar interiors. In order to obtain radiative accelerations in stellar atmospheres, the radiative transfer equation has to be solved to a precision, in wavelength, sufficient for accurate integration of the radiative acceleration equation. The physical processes involved and recent improvements in the calculation methods of radiative accelerations are reviewed here. A frequency grid on which precise radiative forces can be obtained in stellar atmospheres via the sampling method are also illustrated.

A Survey for Pulsating Hot B Subdwarfs (EC 14026 stars): A Progress Report and the Case of KPDJ930+2752, Billeres Malvina, Gilles Fontaine, and Pierre Brassard, Université de Montréal.

In 1996, on the basis of the theoretical predictions of Charpinet et al. (1996), we initiated a survey in the northern hemisphere for luminosity...