Special Session 7 - Summary and Concluding remarks

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This was a very pleasant and interesting meeting on star formation. The debate run on freely and contributions were of a very high level, including the oral contributions of four exceptional graduate students.

We discussed star formation diagnostics over the full frequency range, going from radio to gamma rays. In the Special Session 7, high energy phenomena were often cited by researchers working on other frequencies. Most people became recently aware of the importance of high energy phenomena to star formation and disk evolution. The interesting issue is that it happened in recent years greatly due to Spitzer, an infrared telescope, after the detection of Neon lines in circumstellar disks of sun-like stars. It was said that, in what seemed to be Spitzer noise, raised a forest of water (so much sought) and Neon (not sought at all) lines in the spectra of the circumstellar disks of low mass stars.

From a number of talks we saw that brown dwarfs are just a scaled version of T Tauri stars. They have disks and accretion goes on with the same characteristic variability. They have jets, that are still quite hard to image, even in the VLT. They also form in binaries and, although eclipsing binaries seem to be hard to find, new observations of astrometric binaries are producing ways to test evolutionary models in the very low mass regime. Brown dwarf atmospheres remain a challenge that nevertheless evolves rapidly. We now need spectra of binaries with well determined masses to fully test the atmosphere models, which are beautiful, though quite complicated. It took a decade work to get to the actual state-of-the-art, but it looks to us like a good investment of time, given the results.

The first results of the CoRoT satellite on the star-forming region NGC 2264 were presented in the meeting, which includes the most detailed light curves up to now of young low mass stars. The rotation signatures are easy to measure and show substantial variations from ground-based results of the same region. The accretion signatures are quite impressive too, showing that, for a reasonable number of stars, we are able to probe the dynamic star-disk interaction.

Stellar ages in the pre-main sequence became though a lot more uncertain. It was suggested that they are not properly measured, which caused a lot of discussion. It was also shown that we may need to know the entire accretion history of an object to find out its age from an HR diagram in the Pre-Main-Sequence. This could explain the large dispersion observed in the HR diagram among young stars from the same star forming region, but it would also make precise age determination an almost impossible task in early stellar evolution.

The debate goes on among X-wind and disk-wind defenders, with much more detailed and complex models, including multipolar magnetic fields and MHD simulations on each side.

Finally, we saw that planet formation goes on in multiple stellar systems. Planets can form in circumstellar disks of wide binaries, as well as in circumbinary disks around tight companions. Tight binaries, however may have a significant influence on inner disk evolution.

From stars to planets and from gamma rays to radio wavelenghts, we discussed the formation and early evolution of star-disk systems. We would like to thank all the participants for making this a very special session.

Silvia Alencar and Jane Gregorio-Hetem
Part V. List of Poster papers

The Evolution of Disks, Protostars and the Young Cluster IRAS 20050+2730
Nancy R Adams

Optical depth effects in the X-ray spectra of CTTSs
Costanza Argiroffi

Energetic processes in young accreting stars with outbursts
Marc Audard

Searching for Ionized Gas Tracers in Spitzer IRS Spectra of Young Stars in Taurus
Carla Baldovin-Saavedra

Multi-Epoch Survey of 10 μm Silicate Variability in DG Tau and XZ Tau
Jeffrey S. Bary

Modeling the X-ray emission from the nearest jets: HH 154 and DG Tau
Rosaria Bonito

The Young Stellar Population in Orion OB1
Cesar Briceño

The High Energy (UV/X-ray) Radiation Fields of the Young Stars GM Aurigae and HD135344B and the Likely Effects on Their Transitional Disks
Alexander Brown

An X-Ray Census of the Young Stars of Serpens
Joanna M Brown

Rotation and Magnetic Fields in Fully Convective Stars: What simulations can tell us
Matthew Browning

Day-night side cooling of the strongly irradiated planet
Jan Budaj

Study of transitory disks between the protoplanetary and debris phases
Carolina Chavero

Searching for DIBs in circumstellar environments of Herbig Ae/Be stars
Cristiane Costa

The physical and chemical environment of a star-forming bright-rimmed cloud
Alison Craigon

Tracing Outflows from Massive Young Stellar Objects through Masers and Mid-Infrared Emission
James M. De Buizer

The properties of pre-main sequence stars in the Magellanic Clouds
Guido De Marchi

Resonant structures in Planetesimal Disk from system HD98800
Rita C. Domingos

The disk and envelope structure of Class 0 protostars in Serpens
Melissa Lanae Enoch

Dynamical study of mass accretion and outflow in the classical T Tauri star V354 Mon
Nathalia Fonseca

Numerical results for the formation of the four giant planets of the Solar System
Andrea Fortier

Identification of pre-stellar objects in the Rosette molecular cloud
Diana R. G. Gama

Observing Gap Formation in the Dust Layer of a Protoplanetary Disk
Jean-François Gonzalez
Discovery of co-moving young stars in Cepheus
   Patrick Guillout
Study and determination of physics and geometrical parameters of FU Orionis stars
   Luciana Veronica Gramajo
Optical spectroscopy of young stars detected by XMM in Canis Major
   Jane Gregorio-Hetem
Like arrows pointing to a target: cometary globules in Cygnus OB2
   Marcelo M. Guimarães
Methane Imaging Survey for Planetary Mass Objects in Rho Ophiuchi
   Karl Haisch Jr.
On the X-ray origin of Herbig stars
   Murad Hamidouche
UV Excess Measures of Accretion onto Low-mass Stars and Brown Dwarfs
   Gregory J. Herczeg
The use of genetic algorithms and spectral synthesis in the calculation of Abundances and Metallicities of T Tauri stars
   Annibal Hetem
Star Formation in Musca Dark Cloud: I. IRAS12322-7023
   Gabriel Rodrigues Hickel
Water Ice Grains on the Surface of the Circumstellar Disk Around HD 142527
   Mitsuhiko Honda
Magnetic properties of Herbig Ae/Be stars
   Svetlana Hubrig
The magnetic field of the Herbig Be binary/FU Orionis object Z CMa during the current outburst
   Svetlana Hubrig
New Moving Groups members in the ROSAT All-Sky – Tycho sample
   Alexis Klutsch
The rotational inertia of tidally and rotationally distorted low-mass pre-main sequence stars
   Natalia R. Landin
Variations in the 10-micron Silicate Feature in Actively Accreting T Tauri Stars
   Jarron M. Leisenring
A Planetary Companion Orbiting to the Intermediate-Mass G Giant HD 173416
   Yujuan Liu
Gas and dust in the Inner Region of Protoplanetary Disks
   Leticia Luis
Numerical simulations of planet formation at the borders of the dead zone
   Wladimir Lyra
Grain growth in protoplanetary disks
   Sarah Tahli Maddison
Early-type pre- and main-sequence objects in the Eagle-Nebula and Carina star-forming regions
   Christophe Martayan
Young planetary systems and the Corot satellite
   Thiago Matheus
Angular Momentum Loss Via Stellar Winds
   Sean P. Matt
Snapshots of debris disk evolution with high-resolution thermal imaging
   Margaret Marie Moerchen
A compilation of stellar kinematic groups: stellar streams, moving groups, and associations

David Montes

The heating of accretion columns of T Tauri stars

Alana Paixão

Near Infrared polarimetry of a sample of YSOs

Antonio Pereyra

Protoplanetary disks of TTauri binaries in Orion

Monika G. Petr-Gotzens

Spin Evolution of Very Young Stars: Effect of Magnetic Field Opening During the Accretion Phase

Giovanni Pinzon

New M Dwarf Debris Disks Discovered with the Spitzer Space Telescope

Peter Plavchan

Characterizing the accretion rate of the Classical T Tauri star LkHalpha 264

Oscar Restrepo

Spectroscopy of Herbig Ae/Be stars

Lara Rodrigues

First step to discover planets

Gisela A. Romero

Modeling of accretion shock on CTTSs

Giuseppe G. Sacco

Limits from HST on Brown Dwarfs and Planetary-Mass Objects through Microlensing

Kailash Chandra Sahu

Captured at millimeter wavelengths: periodic millimeter flaring from the classical T Tauri star DQ Tau

Demerese Salter

Disks in early B-stars

Goran Sandell

Understanding Brown Dwarfs in the infrared

Ulf Seemann

Physical characteristics of two very young massive star forming regions

Elise Servajean

Correlations between X-ray emission and accretion tracers in a COUP subsample of T Tauri Stars

Bruno Silva

The connection between X-ray and Infrared

Bruno Silva

Characterization of Young Stellar Clusters

Thais dos Santos Silva

PARSEC: First results proper motions and magnitudes

Richard Smart

Methods for Extinction Determination in Young Stellar Clusters

Beatriz Fernandes Soares

Probing the mass accretion process in the neighbourhood of SN 1987A

Loredana Spezzi

An optical imaging survey of Serpens

Loredana Spezzi

BLAST observations of the Carina Nebula NGC 3372

Sarah Ann Stickler
The 2008 Accretion Outburst of the Prototype EXOR EX Lupi
Guy S. Stringfellow
Determination of the mass and temperature of the exoplanet candidate HD33636b using VLTI+AMBER
Ramarao Tata
SACY: Nurseries and Kindergartens in the solar neighborhood
Carlos Alberto O. Torres
The effect of mass accretion on early stellar evolution
Andrea Urban
The effects of the stellar wind on the magnetic field configuration of weak T Tauri stars
Aline A. Vidotto
RV Crt, an intriguing PMS triple system
Luiz Paulo R. Vaz
Confirmation of the nature of Herbig Ae/Be candidates
Rodrigo Vieira
A Spectroscopic Study of Young Stellar Objects in the Serpens Cloud Core and NGC 1333
Elaine M. Winston
Brown dwarf formation by fragmentation of protostellar discs
A. Whitworth
Condensation in Brown Dwarf Atmospheres
Soeren Witte
X-Ray and Infrared Emission from Young Stellar Objects near LkHalpha 101
Scott J. Wolk
New tree-based gravity solver for octal tree AMR codes
Richard Wunsch