

A 3rd CoRoT run on NGC 2264?

Again coordinated with Spitzer & MOST?

Collected Ideas

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YSOs

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Stellar & Planetary Eclipses

Konstanze Zwintz

Asteroseismology

Accretion Dynamics (S. Alencar)

The accretion process has an important impact in star formation providing mass and regulating the angular momentum transport of the young stellar system through the star-disk interaction. MHD simulations have now followed the star-disk interactions for hundreds of stellar rotational periods, but very little is known from observations about the **star-disk interaction in timescales of months**.

The **CoRoT** observations of the young stellar cluster NGC 2264 in **2008** and **2011** have given us important information on the **star-disk dynamics in a timescale of weeks** and hints that in the few years between the two observational campaigns some star-disk systems have experienced **dramatic changes**, presenting very different light curves in the two epochs.

It would be very interesting to **follow these systems for many months** to try to understand the star-disk dynamics in such a long timescale and to **compare the observational results with the MHD simulation predictions**.

Binaries (S. Aigrain)

- detecting **longer period eclipses and transits**
 - increases chances of detecting planets and ability to weed out blends from true planets using light curve indicators alone
 - the longer the eclipsing binary period the more useful its components are as a test of evolutionary models of single stars
- searching for **eclipse / transit timing variations:**
 - may reveal additional bodies in the system
 - tracking evolution of out-of-eclipse variations
 - interaction between binary orbit and magnetic field of one or both stars and/or disk
 - better understanding of out-of-eclipse variations will help minimise the uncertainty on the fundamental stellar parameters derived from the eclipse light curve

Asteroseismology (K. Zwintz)

- MOST & CoRoT reobservations in 2011 revealed significant **amplitude changes of the pulsation frequencies**
 - increases & decreases observed within 5 and 3 years, respectively
- Precision of CoRoT would allow to measure **evolutionary period rate changes** within several years:
MOST2006, CoRoT2008, MOST & CoRoT2011 & MOST & CoRoT2013?
- Several **high-priority targets were missed in 2011** due to technical issues
 - several important science questions are not possible to address, e.g. testing of granulation to be part of the variability
 - for a 3rd run we need to make sure these stars are included

Proposal to CoRoT SC

- to be written & submitted within the next months
- Observations to be proposed for **fall/winter/spring 2013 / 2014**
 - better observing conditions for CoRoT than 2011/12!
- observing time: **as long as possible, i.e. 3-6 months**
- likely coordinated with **Spitzer** „short“ program
 - proposal to be submitted as well
- likely with **MOST** (if still functional)
 - good target for MOST, discussed with Jaymie, formal proposal to MOST Science Team next summer
- maybe also coordinated with **ground-based facilities**