

Some news from CEST

- Candidates from the alarm mode
- New candidates from the analysis of the N2 data by all the teams of CEST:
 - IRa01
 - LRc01
 - > Organization of the work
(automation + case by case analysis)
- Follow up operations
 - On going effort
 - Regular telecons to manage and share the effort
(Magali)

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The mailing list of the Detection Working Group is: corot.detect@oamp.fr .

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- For each run of observations the positive detections of each team are summarized in a single table that contains the transit candidates and the clearly identified eclipsing binaries. The filling up and management of this table is under the responsibility of the detection teams. However, to permit merging and subsequent analyses, these tables must be in CSV format with a common structure:

- the 10 first columns are devoted to the merging operations and must keep the same order,
- the number and content of all the other columns are completely free for additional comments.
- ..

- The "detection tables" are then merged and sorted automatically using a common ranking:

- Rank 1: for secure detection (periodic and well shaped transits - possible planets)
- Rank 2: for clear detection of a periodic event but with bad shape OR well shaped transits in small number (1 or 2)
- Rank 3: for periodic events with bad shape (possible eclipsing binaries)
- Rank B: for clearly identified Eclipsing Binaries
(After the automatic sorting, the eclipsing binaries are systematically placed at the end of the common lists).

| | CoRoT-Id | Win-Id | peri | dept | dur | rank | Sha | Sec | Var | Col |
|----|------------|---------|--------|-------|-------|------|-----|-----|-----|-------|
| | (-) | (-) | (d) | (%) | (h) | 123B | UVS | YNP | YNP | YNP-W |
| 1 | 0100567226 | E2 5365 | 7.704 | 0.416 | 1.69 | 200 | 010 | 010 | 010 | 000-1 |
| 2 | 0101206560 | E2 0192 | 1.74 | 2.705 | 1.735 | 200 | 100 | 010 | 100 | 100-0 |
| 3 | 0101439653 | E1 2761 | 17.505 | 3.969 | 6.36 | 110 | 010 | 010 | 010 | 000-1 |
| 4 | 0100468104 | E2 2533 | 1.041 | 0.324 | 1.79 | 101 | 110 | 011 | 110 | 000-2 |
| 5 | 0100589010 | E2 4006 | 0.78 | 0.132 | 0.94 | 100 | 010 | 010 | 010 | 000-1 |
| 6 | 0100768215 | E2 4390 | 2.941 | 0.3 | 3.53 | 100 | 010 | 001 | 010 | 000-1 |
| 7 | 0101030785 | E1 1942 | 0.734 | 0.32 | 0.88 | 100 | 010 | 010 | 001 | 000-1 |
| 8 | 0101064610 | E1 5313 | 17.483 | 1.522 | 1.05 | 100 | 010 | 010 | 010 | 000-0 |
| 9 | 0101086161 | E2 1145 | 6.21 | 0.67 | 2.87 | 100 | 100 | 010 | 010 | 100-0 |
| 10 | 0101091849 | E1 5173 | 11.76 | 0.74 | 11.58 | 100 | 000 | 000 | 000 | 000-0 |
| 11 | 0101106246 | E2 3257 | 11.28 | 0.48 | 4.34 | 100 | 000 | 000 | 000 | 000-0 |
| 12 | 0101175376 | E1 4959 | 5.31 | 0.77 | 9.76 | 100 | 000 | 000 | 000 | 000-0 |
| 13 | 0101271163 | E2 4512 | 9.52 | 1.07 | 9.76 | 100 | 000 | 000 | 000 | 000-0 |
| 14 | 0101708567 | E1 4327 | 1.793 | 0.269 | 2.15 | 100 | 100 | 010 | 010 | 000-0 |
| 15 | 0110604224 | E2 3681 | 3.45 | 0.12 | 2.07 | 100 | 100 | 010 | 010 | 000-1 |
| 16 | 0100609705 | E2 3895 | 3.303 | 0.094 | 3.964 | 010 | 100 | 010 | 010 | 000-1 |
| 17 | 0101151113 | E1 1111 | 18.75 | 0.22 | 1.04 | 010 | 000 | 000 | 000 | 000-0 |
| 18 | 0101097682 | E1 3191 | 1.938 | 0.111 | 1.4 | 001 | 001 | 001 | 100 | 000-1 |
| 19 | 0101368192 | E1 0523 | 4.26 | 0.42 | 2.95 | 001 | 100 | 010 | 010 | 001-0 |
| 20 | 0100524672 | E2 4093 | 0.432 | | | ---B | 000 | 000 | 000 | 000-0 |
| 21 | 0100567689 | E2 5511 | 10.731 | 2.6 | 5.41 | ---B | 000 | 000 | 000 | 000-0 |

From the automated procedures

IRa01: 228 candidates:
38 planet candidates + 190 Binaries

LRc01: 143 candidates:
19 planet candidates + 124 Binaries

**Case by case analysis
is mandatory**

After follow-up operations

- **Confirmed planets:**
 - Exo-1b and Exo-2b
 - Exo-3b: $R \sim 0.6 R_{\text{Jup}}$ and $M \sim 15\text{-}20 M_{\text{Jup}}$
Period = 4.2 days ; depth $\sim 0.4\%$; $V = 13.3$
 - Exo-4b: $R \sim 1 R_{\text{Jup}}$ and $M \sim 1 M_{\text{Jup}}$
Period ~ 9 days; depth $\sim 1.2\%$; $V = 13.7$
- From the FU pipeline:
 - Four good candidates (to be confirmed)
 - IRa01: 11 days - 0.3% and 2 days - 1%
 - LRc01: 6 days - 0.6%
 - LRa01: 4 days - 1.4% (from the alarms mode)
 - Other candidates still in the process

Summary of transit candidates for IRa01

24 candidates in the FU process

Candidate resolution

The results are as follows:

2 objects were found to be close-in gas giant transiting planets

3 objects are “background eclipsing binaries”, the signal is due to a dip in a nearby star spilling in the Corot mask, diluted by the light from the target.

4 objects are eclipsing binaries in the target, possibly diluted by a companion in a physical triple system, including a possible very low-mass companion in one case

4 objects are some unidentified variation of non-planetary signal, including background eclipsing binary, eclipsing binary on target, or spot-related variability

1 object rotates too fast for spectroscopic follow-up

12 unsolved candidates

(from the report of F. Pont in charge of the analysis of the run IRa01)

« Pipeline » of papers

ExoplanetPapers

List of papers

. Title: "Transiting planets from the CoRoT space mission"

| N* | Sub-Title | journal |
|-----|---|-----------------------|
| (1) | "CoRoT-exo-1b: a low-density short-period planet around a G0V star" | A&A letter (accepted) |
| (2) | "CoRoT-exo-2b: a transiting planet around an active G star" | A&A letter (accepted) |
| (3) | "The spectroscopic transit of CoRoT-exo2b with SOPHIE and HARPS" | A&A letter (accepted) |
| (4) | Detailed LC analysis of Exo-2b: reflected light | TBD |
| (5) | Detailed LC analysis of Exo-1b (reflected light? Transit timing variations ?) | TBD |
| (6) | Rossiter effect of Exo-1b and detailed FU analysis | TBD |
| (7) | Accurate determination of Exo-2b star parameter | TBD |
| (8) | Detailed LC analysis of Exo-2b (transit timing variations) | TBD |

Plus: ... >4 other papers for Exo-3b and Exo-4b