

COMMUNIQUE DE PRESSE

The CoRoT satellite : 3 more years to hunt for planets and to listen to the music of stars

CNES, together with its national partners (CNRS-INSU and Observatoire de Paris) and international partners (Austria, Germany, Belgium, Brazil, ESA, Spain), has extended the operations of the CoRoT mission for three additional years, until 31 march 2013. The decision was taken on Friday october 23rd.

CoRoT is a satellite devoted to the study of the internal structure of stars and to the hunt for planets outside the Solar System (exoplanets). It was launched on 27 december 2006, and the initial planned duration of the mission was 3 years.

However the quality of the scientific results obtained to date is such to clearly grant an extension of the mission. For instance, CoRoT measured vibrations of various types of stars, some similar to the Sun, some more massive or older : these results need now to be confronted with theory. The CNES satellite also revealed that most stars are much more variable than thought. On the exoplanets side, the crop is to date 7 confirmed planets, with many more candidates currently scrutinized by ground telescopes. Several of these detections are world firsts, such as the smallest and only rocky exoplanet known to date, CoRoT-7b (which is also the one exhibiting the shortest revolution period around its host star-20 hours), or the densest one, CoRoT-3b.

These results, which are gathered in a special issue of the scientific journal *Astronomy & Astrophysics*, are major breakthroughs for stellar physics and for exoplanetary science. This is the basis for the mission extension, decided after an exhaustive scientific and technical review process, which allows fully exploiting these capacities.

For stellar studies, the mission extension will allow to sound new types of stars and also to revisit more in depth those which have exhibited the most unexpected behaviours. Concerning the exoplanets, beyond resulting in a greater number of detections, the three additional years will be devoted in particular to the search for "hot super earths", that is, planets slightly more massive than the Earth but much closer to their parent star.

CoRoT in a few words :

The CoRoT satellite was developed and is operated jointly by the CNES and the CNRS-INSU laboratories, the main ones being the Laboratoire d'Etudes Spatiales et d'Instrumentation en Astrophysique (CNRS, Observatoire de Paris, Université Pierre et Marie Curie, Université Denis Diderot), the Laboratoire d'Astrophysique de Marseille (CNRS, Université Aix-Marseille 1 ; Observatoire Astronomique de Marseille Provence), the Institut d'Astrophysique Spatiale à Orsay (CNRS, Université Paris Sud) and the Observatoire Midi Pyrénées in Toulouse (CNRS, Université Paul Sabatier). The most numerous, the strongest, the project also took benefit from an important European contribution (Germany, Austria, Belgium, ESA and Spain), completed by the one from Brazil.

CoRoT, which name means "Convection, Rotation & planetary Transits" has two scientific goals : the search for planets orbiting around other stars than our Sun, and in particular for planets similar to our Earth; and the detection of the vibrations of the stars in order to sound their internal structure (stellar seismology). This satellite, has a 27 cm telescope orbiting the Earth. It was designed to detect tiny light variations from stars distant of up to a few hundreds light years from the Sun during long observation sessions.

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