COLIBRI (aka GFT)

- Status report -





(Laboratoire d'Astrophysique de Marseille)

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A transient sky follow-up telescope!

COLIBRI plays a key role in the SVOM system:

- To observe the early optical afterglow during the slew of the satellite.
- To provide fast accurate positions of faint and dark GRBs.
- To provide a fast redshift estimator to trigger instantly the largest facilities (VLT and NTT in particular).
- To complement the photometric follow-up of sources observed by SVOM during the General Program (between GRBs).

But it will be also interested in all the scientific questions addressed by the transient sky: identification of the GWs and neutrinos alerts, LSST follow-up, etc.

COLIBRI

A dedicated robotic telescope:

Delay between alert reception and start of an observation: <20 sec.

Primary mirror diameter: 1.3 m.

Two (probably three) simultaneous arms:

- Wide field of view: 26 arcmin.
- Visible domain: B to SDSS z bands.
- Infrared domain: up-to H band.



Scientific performances



- ➡ Follow about 100% of the GRBs detected.
- Good redshift precision for 3 < z < 7.5.

Results from D. Corre (PACA-CNES PhD, defended at the end of November 2018)



A complete system



Institutional partners

OCEVU/AMU plays a key role in this project by funding the telescope and a part of the human ressources.

INSU/CNRS identified the project as one of its *P0* at the latest Colloque de Prospective (Giens, 2013). It funds part of the developments (trhough CSAA) and provides a part of the human ressources.

CNES funds the developments on the near-infrared camera (CAGIRE).

FOCUS/UGA provides the near-infrared sensor for CAGIRE (SOFRADIR development).

CONACyT and **UNAM** funds a part of the developments (optical camera, beam splitter and infrastructure at OAN) and provides the human ressources.

MoU

Memorandum of Understanding (MoU) now officially signed:

- Official agreement between France and Mexico for the scientific development and the exploitation of COLIBRI.
- Board composed of AMU, CNRS and CNES for France, UNAM and CONACyT in Mexico.
- Time sharing: 10% to the observatory, 45% to the project and 45% to the French and Mexican scientific communities (through a national call for proposal).

An important action for 2019: organized the first Board meeting!

Main key dates

A very dense schedule:

- Start of the project: mid-2015.
- Official order of the telescope by AMU (for OCEVU): July 2016.
- AITs/AIVs of the telescope and the visible arm at OHP: May to October 2019.
- Transportation and installation at Mexico: November 2019 to March 2020.
- Start of the scientific observations: Summer 2020.

For the time being, only 6 months of delay since its beginning, mid-2015...

Main actions performed in 2018

GFT infrastructure:

- Official groundbreaking (May 2018).
- PDR (May 2018).
- Start of the construction.

Infrastructure at OHP:

- Platform for the AITs/AIVs now fully operational.

Instruments:

- CDR DDRAGO (May 2018).
- Start of the construction.

Polishing of the M1&M2 :

- On-going process.

Control Center and Instrument Center:

- Delta-PDR soft (May 2017)

Observatorio Astronómico Nacional in San Pedro Martir

A very nice astronomical site:

- Median seeing: about 0.8 arcsec.
- About 80% of observable night (60% photometric).
- Located in a protected national park.





Groundbreaking



An official name was given on this occasion:

COLIBRI



Infrastructure at OAN



Infrastructure at OAN

"OBSERVATORIO COLIBRÍ"

Calle 10 y Morelos #807-5 Fracc. Ulbrich Tel. (646) 204-78-02 Email: spi.ensenada@gmail.com





14

M. I. Ricardo Sánchez Vergara

Telescope and instrument design





Polishing of the main mirrors



Main next dates

A very dense schedule:

- Factory acceptance of the dome/the telescope: February 2019.
- TRR: first week of April 2019 (TBC).
- Arrival of the telescope at OHP: April 2019.
- AITs/AIVs of the telescope and the visible arm at OHP: May to October 2019.
- Transportation and installation at Mexico: November 2019 to March 2020.
- Start of the scientific observations: Summer 2020.

For the time being, only 6 months of delay since its beginning, mid-2015...

ERIDANUS

Laboratoire International Associé (LIA):

- CNRS proposed to the Mexican partners the setting up of an associated international laboratory between France and Mexico.
- Motivation: prepare the scientific exploitation of COLIBRI and strengthen the links in astronomy between the two countries.
- Official signature: May 29, 2018 in Mexico.
- Has started officially the 1st of January 2019!
- First meeting: first week of June in Toulouse (with Jean-Luc Atteia as kind organizer).



Conclusion

The project is progressing at a steady pace with a very limited delay so far.

2019 will be a very important year with the reception of the telescope, its AITs/AIVs in France, its departure to Mexico and the reception of the building in Mexico.

Scientific observations will start in 2020:

- The LIA is here to prepare us for the scientific exploitation of Colibri.
- OCEVU scientists should not hesitate to propose observations: the project is open to all proposals (it is not a private telescope!).

