

**Hervé Le Coroller**

**Astronomer (Professor equivalent)**

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**Born on 11/2/1971**

**Nationality: French**

## **2016-2025 Astronomer at LAM (Aix-Marseille University)**

- **High-contrast imaging:** Development of a new method, Keplerian-Stacker (<https://github.com/kstacker/>), for observation and data reduction of coronagraphic images. This approach represents an essential technique for the detection of exoplanets analogous to those in our Solar System using next-generation ground-based (e.g., E-ELT) and space-based (e.g., Roman Space Telescope, Habitable Worlds Observatory) instruments.
- **Habitable Worlds Observatory space project:** CO-I of the NASA Concept of Operations and Post Processing (COPP) working group and leader for the multi-epoch recombination algorithms.
- **LAM CO-I for the SPHERE project:** Responsible for the TDB database, which played a central role in observation preparation (WP1), candidate identification (WP2), planning new observations (WP3), and statistics for the SHINE survey (WP4). Active participation in WP2 (DRT) activities for data reduction and SHINE observations.

### ***Service Tasks (ANO5 and ANO3)***

- Responsible of the **DIVA+ high contrast imaging database** (<https://data.lam.fr/divap/>; > 15 surveys + analysis tools)
- Support astronomer for the **SOPHIE spectrograph at OHP T193**

### ***Teaching (>66h ETD)***

Implementation of a practical course on CCD and CMOS characterization as part of Labex FOCUS for M2 and PhD students. Observation practical (e.g., photometry and imaging with the OHP 80 cm telescope) with physics master's students at Aix-Marseille University. Lectures at OHP on Fourier optics and interferometry.

### ***Administrative Responsibilities and Scientific Outreach***

Member of the HARMONI WG5 and PCS WG7 Extremely Large Telescope (ELT) for reduction algorithms of these future instruments; participation in PhD defense committees; Member of the FIE/EII group for writing a white paper on the future of interferometry in Europe; Member of the PhD selection committee for LAM in 2023, etc.

## **2006-2016 Associate-Astronomer at Haute-Provence Observatory**

**Research Topics:** PI of the Carlina project (<http://carlina.obs-hp.fr>), a technical demonstrator of a hypertelescope i.e. search for opto-mechanical solutions + optical simulations (Fourier, Zemax); Management of a team of 10 engineers/technicians; four peer-reviewed articles published on the subject and numerous conference papers; Lequeux Prize from the Paris Academy of Sciences.

### ***Service Tasks***

Support astronomer for the SOPHIE spectrograph at T193 OHP dedicated to high-precision radial velocity measurements

### ***Teaching***

Establishment and implementation of practical courses in interferometry/optics + courses in Fourier optics (80 ETD h/year) + Head of multi-disciplinary teaching at OHP

### ***Administrative Responsibilities and Scientific Outreach***

Member of the FIE/EII group dedicated to the Future of Interferometry, Organization of conferences at Collège de France and an international conference on the Future of Interferometry (<http://interferometer.osupytheas.fr>)

## **2002-2006 Postdoctoral Research**

- Two years at Keck Observatory (USA): Observations on the IOTA interferometer and data reduction in interferometry (publication of the first images of Mira stars)
- Two years as A.T.E.R. at Collège de France (A. Labeyrie's team)

## **1998-2000: Other Professional Experiences**

- Awarded by A.N.V.A.R./OSEO for a business creation project (Altizoom) for aerial photography from stabilized gondolas under balloons and drones. One-year training at H.E.C. Institute in management.
- Adventure Grant from the City of Paris: Aerial photography reportage in Iceland using a drone. Several exhibitions: Paris, Reykjavik, Paimpol (<http://lecoroller.obs-hp.fr/index.php?page=galerie-photo>)

## **University Studies and Training**

- HDR defended in April 2016 at AMU
- PhD from the University of Provence (Aix-Marseille I) defended on September 25, 2002
- 1997-1998 - MSc in Astrophysics at Université Joseph Fourier, Grenoble I
- 1996-1997 - MSc in Geophysical at Université Joseph Fourier, Grenoble I