

# Call for Proposals on IRAM Telescopes

The deadline for submission of observing proposals on IRAM telescopes, both the NOEMA interferometer and the 30-meter telescope, covering the scheduling period 1 June to 30 November 2018, is

15 March 2018, 17:00 CET (UT + 1 hour)

IRAM proposals should be submitted through the *Proposal Management System* (PMS) at URL:

<http://pms.iram.fr/>

PMS provides on-screen instructions to guide the proposal editor through the submission process. The procedure consists in filling in an on-line form with the details of the requested observations (source coordinates, receiver setups, array configuration, etc.), and to upload a single file in pdf format containing the scientific and technical justification. A  $\LaTeX$  template is provided from the PMS submission page for your convenience. This file may be customized, or the pdf file can be generated with another software, but in any case **proposers should respect the following requirements**: (1) A normal proposal may contain up to two pages of text describing the scientific aims and the technical justification (4 pages for a Large Program, see below) (2) up to two pages of figures, tables, and references may be added (but the text should not be mixed with figures, tables, and references!), and (3) the font size must be 11pt.

For a proposal to be complete, PMS requires that all authors validate their identity (e-mail and affiliation) and their participation to the proposal before the deadline. The editor of the proposal will have to send invitations to all authors through PMS by clicking an *invitation* button. We urge proposal editors to invite the authors through PMS well before the deadline to give them enough time to validate their identity before the deadline. Authors that fail to validate their participation will automatically be dropped from the proposal.

PMS will be opened for submission of new proposals about two weeks before the deadline<sup>1</sup>. Proposers may modify their proposals in PMS until the deadline, in which case the *submit* button must be activated again after modification of the proposal. Please avoid last minute submissions when the network could be congested. If you experience any difficulty with the submission process in PMS, please contact us at [pms-feedback@iram.fr](mailto:pms-feedback@iram.fr) for help. You may also use this e-mail address for bug reports, general questions and comments.

Detailed information on time estimates, special observing modes, technical information and references for both the NOEMA interferometer and the 30-meter telescope can be found on the IRAM web site, under the **science users** tab:

<http://www.iram-institute.org/>

Proposers are encouraged to use the CDS (*Centre de Données astronomiques de Strasbourg*) to check whether a source has already been observed at the 30-meter telescope or the NOEMA interferometer. We recommend to use the **VizieR Catalogue Service** to query<sup>2</sup> the header data of IRAM observations obtained since September 2009 for the 30-meter telescope, and ab initio (December 1990) for PdBI/NOEMA.

The source areas to be mapped by the guaranteed time large NIKA2 programs are "fenced" against new continuum 2mm/1mm mapping projects at the 30-meter telescope or mosaicing projects at NOEMA. To inform observers, proposal abstracts and a complete source list is available on the **NIKA2 home page**.

We encourage the submission of **Large Observing Programs** that require more than 100 hours of observing time and that address strategic scientific issues, using the 30-meter telescope with EMIR or HERA. You may consult the **Large Program Policy** on the IRAM web site for further details. **Following the successful installation and commissioning of the *PolyFiX* correlator end of 2017, Large Programs will be again accepted for NOEMA starting with the current *Call for Proposals*. However, certain restrictions are put in place to account for the ongoing, significant investment of technical time that is still needed for the NOEMA project.**

The 30-meter telescope will be open for 3 mm VLBI proposals.

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<sup>1</sup>PMS remains open at all times for submission of Director Discretionary Time proposals.

<sup>2</sup>search *IRAM* as catalogue name.

Publications resulting from NOEMA or 30-meter telescope observations should mention this in an acknowledgment “Based on observations carried out under project number XYYZZ [XXX-YY] with the IRAM NOEMA Interferometer [30-meter telescope]. IRAM is supported by INSU/CNRS (France), MPG (Germany) and IGN (Spain)”. IRAM welcomes an acknowledgment to the IRAM staff for help provided during the observations and for data reduction.

*M. Krips & C. Kramer*

## The 30-meter Telescope

Proposals for three instruments will be considered for the coming semester (1 June to 30 November 2018):

1. EMIR, offering four bands at 3, 2, 1.3, and 0.9 mm wavelengths in both polarisations,
2. HERA, the 9 pixel dual-polarization heterodyne receiver array operating at 1.3 mm wavelength, and
3. NIKA2, the second generation New-IRAM-KID-Array, working simultaneously at 1.15 and 2 mm with a field-of-view of 6.5’.

The two heterodyne frontends, EMIR and HERA, can be connected to a suite of narrow- and broad-band spectrometers with resolutions ranging from 3.3 kHz to 2 MHz, and bandwidths of up to 32 GHz. During the summer semester emphasis will be put on observations at the longer wavelengths. Observations at wavelengths shorter than  $\sim 1.3$  mm will be scheduled toward the end of the semester in October/November. As in previous semesters, we will offer several weeks of pooled observations in order to optimize the use of the telescope. Proposers are requested to use the EMIR and HERA time estimators which are available online via the [IRAM 30-meter telescope webpage](#).

NIKA2 projects will be observed in one-week blocks of pooled observations which will probably be scheduled in October/November. Proposers are requested to use the NIKA2 time estimator python script which has been updated and is available online via the [NIKA2 home page](#). The new IRAM data processing software will not be ready before the end of the summer semester. However, the IDL data pipeline which has been developed by the NIKA2 consortium may be used. If need be, a friend-of-the-project will be assigned to provide help and advice in the initial data reduction using this pipeline. At present, it may take several weeks after a run, during which the calibration scans and in particular the skydips are analyzed, and calibration parameters are derived, before final calibration products become available.

A detailed account of the current observatory capabilities is available in a separate document on the [Call for Proposals web page](#).

### What is new?

The two first NIKA2 pool weeks in October 2017 and January 2018 have been a success. Observations of the three selected guaranteed time large programs started together with several of the open time projects. In addition, remaining commissioning observations were conducted. New, confirmed NEFDs are given on the NIKA2 home page, and have been included in the time estimator for NIKA2 for the upcoming summer semester. The NIKA2 sensitivities and a lot of other parameters characterizing the camera have also been incorporated into the commissioning paper by Adam et al. (2018, A&A). Three pool weeks are planned for the winter semester 2017/18 to take place between January and March 2018. Commissioning of 1 mm polarimetry progressed well during a dedicated week of observations in November, and will continue in early March 2018, and beyond.

*C. Kramer*

# The NOEMA Interferometer

The installation and commissioning of *PolyFiX* started in mid September 2017. Scientific observations resumed very soon after in December 2017, exploiting the powerful new capabilities of this cutting edge correlator in concert with the *full* nine-antenna array. This sets a major milestone in the construction of NOEMA for unprecedented sensitivity and high flexibility of spectral setups.

*PolyFiX* processes an instantaneous bandwidth of 31 GHz that is distributed over two sidebands with 7.744 GHz effective width each and two polarisations, respectively. Each sideband is further split into two *basebands* of 3.85 GHz width (the so called *inner* and *outer* basebands) that are fed into the correlator, hence summing up to eight basebands in total. The spectral resolution is 2 MHz throughout the 15.488 GHz effective bandwidth per polarization. Additionally, up to sixteen high-resolution *chunks* of 64 MHz width can be placed in each of the eight basebands, providing, in this first implementation step of *PolyFiX*, a fixed high spectral resolution of 62.5 kHz in these up to 128 independent chunks.

The GILDAS software ASTRO has been upgraded to help users configure the *PolyFiX* spectral setups. The use of the `feb18` version of GILDAS is mandatory to prepare your proposals.

All antennas are equipped with low noise 2SB receivers. The receivers provide two orthogonal linear polarizations in Band 1, 2, and 3. Each of the two polarizations delivers a bandwidth of 7.744 GHz for the *upper* and *lower* sideband, respectively. The nominal sky frequency ranges covered are 70.4 GHz to 121.6 GHz for band 1, 124.4 GHz to 183.6 GHz for band 2, and 196.4 GHz to 279.6 GHz for band 3. Band 4 observations will not be offered in this semester.

During the summer we plan to schedule two different configurations (see the table below) using up to nine antennas simultaneously. A preliminary configuration schedule for the summer period is outlined below. Adjustments to this provisional configuration planning will be made according to commissioning requirements in the frame of NOEMA, availability of new antennas, proposal pressure, weather conditions, and other contingencies:

Conf	Scheduling Priority Summer 2018
D	June – August
C	September – November

Name	Stations								
8D	W12	W08	W05	E10	E04	N13	N09	N02	–
9C	W20	W12	W09	E16	E10	E03	N29	N20	N11

A detailed description of the current NOEMA capabilities and organizational considerations are given in a separate document on the `Call for Proposals` pages.

**Thanks to the successful implementation of PolyFiX, we will return to our standard grading scheme in which A-rated proposals will be observed and, if necessary, carried over to a subsequent observing semester, while B-rated proposals will be executed on a best-effort basis. Also, *Large Programs* will be accepted again, although restricted in terms of requested observing time.**

*M. Krips*

# Guidelines for Observing Time at the IRAM Facilities

Considering the much increased time requests for the IRAM telescopes over the last few years, taking into account the science operations of ALMA, and considering the substantial new investments of the IRAM partners into upgrading the Plateau de Bure interferometer into NOEMA, the following guidelines for allocation of telescope time are to be considered:

1. In deciding on proposal rankings the Program Committee is requested to take into account the publication record and impact of the proposers with previous IRAM telescope time allocations.
2. The proposers should note in their application whether the same or a similar proposal was or is intended to be submitted to ALMA, in which case a special justification is required why IRAM telescope time is needed.
3. Up to 15% of the available observing time may be invested into projects submitted by PIs affiliated with institutes in non-IRAM partner countries.
4. The fraction of time for Large Programs (a detailed description is given on the IRAM website) can be expanded to a total of about **50% of the scheduled telescope time on the IRAM 30-meter telescope. Given the successful implementation of *PolyFiX*, Large Programs will be opened again to the community for NOEMA for this Call, but for a smaller fraction of the available NOEMA telescope time. A significant amount of technical time is still needed to upgrade the observatory to the full NOEMA capabilities.** In order to ensure proper management of these programs in close interaction with the IRAM observatory, including the provision of suitable archive data products for the general scientific community, only programs led by a PI located in one of the IRAM partner countries will be considered.
5. Once accepted, PIs of Large Programs cannot submit other proposals (as PI) during the active time of the Large Program.

Finally, we inform that the IRAM partners can reserve time for mutually agreed “Observatory Programs”.

## Data policy

The IRAM data policy is as follows:

- IRAM organizes storage of raw and online calibrated data for the 30-meter telescope and storage of raw data for PdBI/NOEMA on unlimited time scales.
- Header information of PdBI/NOEMA observations later than December 1990 can be found **here in the CDS** (*Centre de Données astronomiques de Strasbourg*).
- Header information of 30-meter telescope observations later than 2009 can be found **here in the CDS**.
- Programs are distinguished between normal programs and Large Programs. Data from Large Programs are public also in calibrated format after an 18 month proprietary period (counting from the end of the last semester of observations) and are accessible through the **IRAM Large Program Archive**.

- Raw data from PdBI/NOEMA or online calibrated data from the 30-meter telescope of individual normal programs may be provided by IRAM after a three year proprietary period (again counting from the end of the last semester of observations) and depending on Director's decision. Multiple large scale requests are excluded. IRAM does not provide support for data reduction of such retrieved data. Referencing of these data should follow the **IRAM Data Publication Policies** and in addition include at least one reference to publications of the PI team, or the PI name and program number in case the data have not yet been published.

## RadioNet Travel Funds

Starting January 1, 2017, observations with the IRAM facilities are supported by RadioNet under Horizon 2020, the European Framework Program for Research and Innovation. Within this program, IRAM is committed to offering Transnational Access (TA) for scientists from all over the world, an initiative aimed at facilitating access to radioastronomical infrastructures and enable scientists to conduct research at the forefront of technological innovation. As part of this initiative, travel funds are available to support visits of TA eligible astronomers to IRAM provided their research is not supported by funds from another program.

Travels may be supported to the 30-meter telescope for observations (contact: C. Kramer) and to IRAM Grenoble for the reduction of NOEMA data (contact: R. Neri). The RadioNet home page provides first information. The Principal Investigators of IRAM proposals eligible for TA funding will be informed individually.

All TA-supported projects that are scheduled at the NOEMA interferometer or at the 30-meter telescope must acknowledge the support from the European Union by including the following sentence in the publications resulting from their observations: *The research leading to these results has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 730562 [RadioNet].*

*C. Kramer & R. Neri*