

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 2017, is

16 March 2017, 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 L^AT_EX template is provided from the PMS submission page for your convenience. You may customize this file, or generate the pdf file 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) you may add up to two pages of figures, tables, and references (but don't mix text with figures, tables, and references!), and (3) the font size must be 11pt or larger.

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 deadline¹. 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 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 30m 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 30m telescope or the interferometer. We recommend to use the **VizieR Catalogue Service** to query² the header data of IRAM observations obtained since September 2009 for the 30m, and ab initio (1990) for PdBI/NOEMA.

Four guaranteed time programs for NIKA2 were accepted by the Program Committee in September 2016 and will be observed. The areas to be mapped with NIKA2 shall be "fenced" against new continuum 2mm/1mm mapping projects at the 30m or 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 30m telescope with EMIR or HERA. You may consult the **Large Program Policy** on the IRAM web site for further details. **Due to the large investment in technical time necessary in the current extension phase of the NOEMA project, Large Programs will not be accepted for the interferometer under the current Call for Proposals.**

The 30m telescope will be open for 3 mm and 1 mm VLBI proposals.

¹PMS remains open at all times for submission of Director Discretionary Time proposals.

²search *IRAM* as catalogue name.

Publications resulting from NOEMA or 30m telescope observations should mention this in an acknowledgment “Based on observations carried out under project number XXXZZ [XXX-YY] with the IRAM NOEMA Interferometer [30m 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.

C. Kramer & J.M. Winters

The 30-meter Telescope

Proposals for three instruments will be considered for the coming semester (1 June to 30 November 2017):

1. the EMIR receiver offering four bands at 3, 2, 1.3, and 0.9 mm wavelengths in both polarisations, and
2. the 9 pixel dual-polarization heterodyne receiver array, HERA, operating at 1.3 mm wavelength.
3. In addition, the NIKA2 1 mm/2 mm continuum camera will be offered for shared-risk observations.

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 ~ 1.3 mm will be scheduled toward the end of the semester in October/November and in observing pools. Proposers are requested to use the EMIR and HERA time estimators which are available online via the [IRAM 30m webpage](#).

NIKA2, the second generation New-IRAM-KID-Array, operates simultaneously at 150 and 260 GHz with a field-of-view of $6.5'$, and is based on three arrays of superconducting Kinetic Inductance Detectors (KID) with a total of 2896 pixels and polarimetry capabilities in the 1 mm band. First commissioning results have been published by Catalano et al. (2016).

NIKA2 is available in the summer semester on a shared-risk basis and for up to 10 projects in a maximum of 100 hours in total as commissioning of the hardware and software has not yet been concluded. No NIKA2 large programs will be accepted in open time nor are polarimetry modes offered at this point. NIKA2 will be scheduled in observing pools. For help with offline data reduction, users will be assigned a friend-of-the-project, which will be an astronomer from IRAM or the NIKA2 consortium.

Proposers are requested to use the NIKA2 time estimator python script which has been updated and is available online via the [NIKA2 home page](#).

A detailed account of the current observatory capabilities is available in a separate document on the [Call for Proposals](#) and the [30m web pages](#).

What is new?

A new dichroic mirror was installed for dual-band operation of EMIR bands E090 and E230. The improved performance of the dichroic has led to much improved receiver noise temperatures above 240 GHz, now allowing e.g. for efficient, simultaneous observations of the 1-0 and 3-2 transitions of HCN, HNC, HCO^+ .

Filters have been installed in the Local Oscillator (LO) chains of the EMIR bands E090 and E150 which successfully suppress unwanted LO harmonics that had caused ghost lines. Few ghost lines have also been detected in the E230 band and a filter is in preparation.

In 2016, an increased level of instrumental circular polarisation has been found with EMIR, hindering in particular spectroscopic XPOL observations with E090 and E150 to measure the Zeeman effect. Details of the ongoing investigation are presented [here](#). Potential users are asked to contact Gabriel Paubert.

MRTCAL is a new GILDAS software package to calibrate EMIR and HERA data. It is planned to switch the online data processing at the telescope from MIRA to MRTCAL mid-February, for standard spectroscopic data. Polarimetry (XPOL) and continuum (pointing, focus, skydip) data will continue to be automatically calibrated with MIRA, for the moment. As usual, only one version of the automatically calibrated CLASS files will be delivered to the observer. The MRTCAL package has been distributed in the standard GILDAS distribution, since the jun16 version. The development team nevertheless requires to upgrade your GILDAS version to feb17 (or a more recent version), as potential bugs of MRTCAL will only be fixed starting with this version. While still distributed for some time in the GILDAS distribution, the MIRA package will not be supported anymore for standard spectroscopic data.

Commissioning of NIKA2 has progressed well during the past months. During two interventions in September 2016 and January 2017, the 2mm array, the dichroic, and lenses inside the cryostat were replaced. In addition, a homogeneous set of electronic readout boards was successfully installed. Data handling and software development for the online data processing have made good progress. Another test week has been scheduled for end of February 2017, to refine instrument characterization, identify any remaining issues, and to start with testing polarimetry. It is expected that non-polarimetry science observations can be started later during the current winter semester.

C. Kramer

The NOEMA Interferometer

Commissioning of antenna 9 is planned to start in March 2017 and the antenna should join the array during the summer for the commissioning of the new NOEMA correlator.

All antennas will be equipped with the new low noise 2SB receivers. This upgrade includes receivers for two orthogonal linear polarizations in band 1, 2, and 3. Each of the two polarizations delivers a bandwidth of 7.7 GHz per sideband, LSB and USB. The nominal sky frequency ranges covered are 70.9 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. The on-site receiver performance in the upper half of the IF bands still needs to be evaluated.

The new NOEMA correlator *PolyFix* is scheduled to be installed around end of April 2017. The installation and commissioning of PolyFix representing a major milestone in the construction of NOEMA, **science operations will be shut down during the 1st half of the summer semester** to perform these tasks. PolyFix will be able to process an instantaneous bandwidth of 31 GHz, i.e. two times 7.7 GHz delivered by the receivers in each of the two sidebands, and in both linear polarizations (= 4 *IF channels* in total). Each IF channel is split into two *basebands* of 3.85 GHz width (*inner* and *outer* baseband) that are fed into the correlator. In total, there are thus 8 basebands which are processed by the correlator. The spectral resolution will be 2 MHz throughout the 15.4 GHz total bandwidth in both polarizations. Additionally, up to 16 high-resolution so-called *chunks* of 64 MHz width can be placed in each of the 8 basebands, providing, in this first implementation step of PolyFix, a fixed spectral resolution of 62.5 kHz in these up to 128 independent chunks. PolyFix will be offered on a shared-risk basis in the summer semester.

The Gildas software ASTRO has been upgraded to help users configure the PolyFix spectral setups. The use of the `feb17` version (or later) of Gildas is mandatory to prepare your proposals.

During the summer we plan to schedule essentially the 8-antenna D configuration (see the table below) and the 9 antenna C configuration should be available toward the end of the semester. We strongly encourage observers to submit proposals that can be executed during summer operating conditions. To keep the procedure as simple as possible, we ask you to put emphasis on:

- observations requesting the use of the 3 mm and 2 mm receivers,
- circumpolar sources or sources transiting at night in August and September,
- observations that qualify for the 8D and 9C configurations (see below).

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

Due to the large investment in technical time necessary in the current extension phase of NOEMA, and the rapid increase of the array's capabilities, *Large Programs* will not be accepted for the interferometer under this *Call for Proposals*.

A detailed description of the current NOEMA capabilities and organizational considerations are given in a separate document on the [Call for Proposals](#) pages and on the [NOEMA Documentation web pages](#).

J.M. Winters

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 have been put in place:

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. 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.
2. Up to 15% of the available observing time may be invested into projects submitted by PIs affiliated with institutes in non-IRAM partner countries.
3. 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 either of the IRAM telescopes. 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.
4. 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 will reserve time for mutually agreed “Observatory Programs” once the NOEMA upgrade is sufficiently advanced.

Data policy

The IRAM data policy is as follows:

- IRAM organizes storage of raw and online calibrated data for the 30m telescope and storage of raw data for PdBI/NOEMA on unlimited time scales.
- Header information of PdBI/NOEMA observations later than 1991 can be found here in the CDS (*Centre de Données astronomiques de Strasbourg*).
- Header information of 30m 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 in reduced 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](#).
- Data from normal programs so far had indefinite proprietary time. Following a decision of the IRAM partners in June 2015 the following changes were introduced: Raw data from PdBI/NOEMA or online calibrated data from the 30m 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 Programme for Research and Innovation. Within this programme, 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 now available to support visits of TA eligible astronomers engaged in research with the IRAM facilities.

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). Detailed information about the eligibility, policies, and travel claims is about to be made available on the RadioNet home page. The Principal Investigators of IRAM proposals eligible for TA funding will be informed individually.

All TA-eligible 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 programme under grant agreement No 730562 [RadioNet]*

C. Kramer & R. Neri