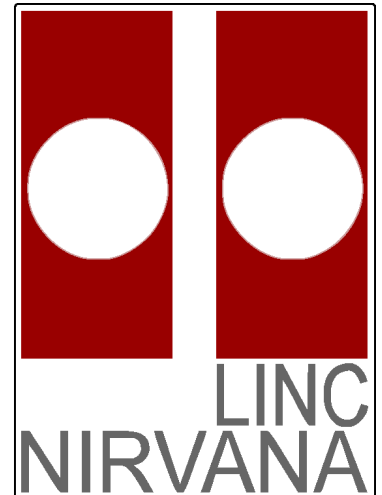


LINC-NIRVANA

The LBT INterferometric Camera and
Near-InfraRed / Visible Adaptive
iNterferometer for Astronomy

A collaborative project of the MPIA Heidelberg, INAF Italy,
Universität zu Köln, and MPIfR Bonn

<http://www.mpia.de/LINC>



LINC-NIRVANA

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Commissioning-7 Plans

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Short Title Com-7 Plans
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| | | | |
|----------|------------|---------------|-----------|
| Prepared | Tom Herbst | dd month yyyy | |
| | Name | Date | Signature |
| Approved | N. Surname | dd month yyyy | |
| | Name | Date | Signature |
| Released | N. Surname | dd month yyyy | |
| | Name | Date | Signature |

Change Record

| Issue | Date | Sect. | Reason/Initiation/Documents/Remarks |
|--------------|-------------|--------------|--------------------------------------------|
| 0.1 | 11.12.18 | all | New doc based on Com-6 doc |
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1 Overview

This document summarizes activities planned for Com-7

2 Dates and Logistics

The run is scheduled for **5 half-nights during 16-20 December 2018**.

We have requested the **first-half** of these nights.

2.1 Team Membership

Participating from MPIA:

| | |
|---------------|----------------------------|
| Tom Herbst | - on summit 15-21 December |
| Micah Klettke | - on summit 15-21 December |
| Fabio Santos | - on summit 15-21 December |

Participating from INAF:

| | |
|------------------|----------------------------------|
| Maria Bergomi | - on summit 15-21 December (TBC) |
| Valentina Viotto | - on summit 15-21 December (TBC) |

Remote from Padova:

Carmelo Arcidiacono
Kalyan Radhakrishnan

Remote from MPIA:

Richard Mathar (on call)

2.2 Day-by-Day Events

Fri 14 December

- Fabio, Micah, and Tom arrive in Tucson
- Maria arrives in Tucson

Sat 15 December

- Fabio, Micah, and Tom shop and then drive to LBT
- Valentina arrives in Tucson
- Maria and Valentina drive to LBT (TBC)

Sun 16 December – Thu 20 December

- Com-7 half-nights

Fri 21 December

- Com-7 team drives down

Sat 22 December

- Tom and Fabio fly back to Europe
- Micah connects to Canada

2.3 Vehicle Logistics

Vehicle 1 (MPG Pilot – Tom)

- to summit Sat 15 December
- to Tucson Fri 21 December afternoon

Vehicle 2 (Rental – Padova)

- to summit Sat 15 December (TBC)
- to TUS airport Fri 21 December (TBC)

2.4 Current Logistical Uncertainties

Three days before departure, we learned of potential conflicts with our request for the first halves of the night.

3 Pre-Run Activities

- Test fast-link / ICE interface
- Continue work on SE search and center
- Cool down LN after power surge “event”

4 Daytime Activities

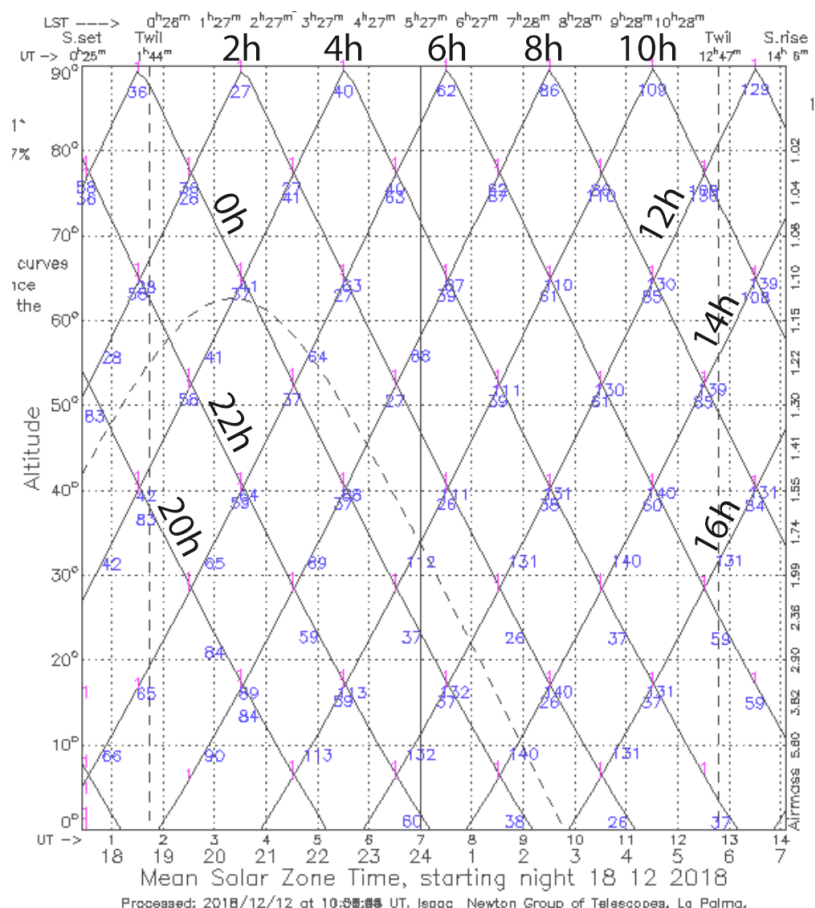
- Work on GWS hysteresis issues
- Calibrate HWS-DX (will have quiet telescope for SOUL)
- Coordinate with LBTO on a safer way to store the RR fiber
- Hibernate LN in coordination with LBTO at end of run

5 Nighttime Activities

We will continue commissioning activities, with a focus on improved acquisition efficiency, fainter guide stars, and acquiring a suitable “first-light” image. We may also work with GWS-DX.

5.1 Right Ascension Availability

The figure below displays target availability during Com-7.



Object visibility for the December Com-7 run.

5.2 Telescope Access Hours

- Sunset at 17:16
- Sunrise at 7:16
- Daytime Access 8:16 – 15:16 or 7 hours **LIMITED by SOUL**
- Nighttime handover at 00:11

Based on <https://www.esrl.noaa.gov/gmd/grad/solcalc/> and standard LBT practice. The handover time includes half of the 10-minute overhead.

6 Requirements on LBTO

6.1 Daytime Activities

| Item | Support Needed | Date(s) |
|-----------------------------------------------------------|----------------------------------------------------------------------------------|----------------|
| Work on GWS hysteresis | None | anytime |
| Calibrate HWS-DX | Quiet telescope on oil. Dim dome. Can co-exist with SOUL RR activities | anytime |
| Coordinate with LBTO on a safer way to store the RR fiber | Telescope locked at zenith for ca. 20 min. Discussion with mountain personnel | anytime |
| Hibernate LN after run | Telescope locked at zenith for ca. 20 min. Training of mountain personnel | 21 Dec morning |

Clearly, the GWS-DX / GWS-SX calibration activities are very time consuming, and may not be completed during this campaign.

6.2 Nighttime Activities

Our nighttime activities have no particular demands on LBTO personnel.

8 To Do List

This section contains an LN-team internal To Do list of tasks to be completed before Com-7.

8.1 Logistics

- verify room reservations (each traveler should check)
- verify Pilot availability (DONE)
- rent 4x4 vehicles (as needed)

8.2 Miscellaneous

- screen and select commissioning target fields – (Tom)
- screen and select PR target fields – (Tom)

9 Important Info

This section contains a mish-mash of important information, gathered in one place. Some of it comes from Carmelo's PC-1 notes (PC1_Notes_Carmelo.pdf).

LN Account on obs3

User lneng Pwd 1amLN\$eng

IP Addresses of LN Machines

ln-x1.linc (192.168.156.231)

ln-x2.linc (192.168.156.232)

ln-x3.linc (192.168.156.233)

laos.linc (192.168.156.42)

Patrol Camera Hot Pixels (from Carmelo's PC-1 notes)

- Reference pixel on axis Patrol Camera SX: 485,421.
- Reference pixel on axis Patrol Camera DX: 488,414. (NOW 487, 415)

LN Web Cam Addresses

9.1 LN Angle Definitions and Info

Note: Much of this is extracted from the document LN_Angles.

GWS Bearing Angle Directions

When looking at the face of the GWS (from the annular mirror), the bearings rotate as follows (Rosalie's notes from PC-2).:

SX rotates counterclockwise with increasing bearing angle
DX rotates clockwise with increasing bearing angle

DX GWS Bearing "Zero Offset Angle"

Based on the measurements during E2 (see comment section of cat2mm_E2.py), the DX GWS bearing "Zero Offset Angle" zAng is **2.38°**. This was measured by doing "pure" E-W-N-S offsets in Parallax mode to SE 1,4,7,10. At the time, we called zAng the "magic angle," but we now use the more precise term "zero offset angle." We need to repeat this measurement using AdSec El/Az offsets during Com-2.

Transformation between Slit and Input Coordinates

For SX, flip the vector up-down and then rotate clockwise by 71.5°
For DX, flip the vector up-down and then rotate counter-clockwise by 71.5°