

**Author:** Andrea Rossi<sup>1</sup>, Felice Cusano<sup>1</sup>, Ester Marini<sup>2</sup>, Simona Paiano<sup>2</sup>

**Affiliation:**

1. INAF- Istituto Nazionale di Astrofisica - Osservatorio di Astrofisica e Scienza dello Spazio Bologna, via Gobetti 93/3 40129 Bologna - ITALY
2. INAF, Osservatorio Astronomico di Roma, Via Frascati 33, 00077 Monte Porzio Catone, Italy
3. INAF, Osservatorio astronomico di Palermo, Piazza del Parlamento, 1, 90134 Palermo, Italy

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Abstract: This document presents the Annual Observing Report for 2022, compiled by the LBT Italia team on behalf of the Istituto Nazionale di Astrofisica (INAF). The report provides a detailed and comprehensive summary of the *queue observing* activities executed at the Large Binocular Telescope (LBT) during the designated period. In alignment with the astronomical observing cycle, the period covered specifically includes the closing phase of the 2021–2022 and the initial observing sessions of the following period. This record documents the utilization of the available focal plane instruments, including MODS1 and MODS2, PEPSI, both LUCI1 and LUCI2, LBC Blue and Red. For each night of observation, data pertaining to the completed scientific programs were logged, providing crucial metrics such as effective observing time and percentages of time lost due to technical issues or adverse weather conditions. The analysis presented here is essential for evaluating the overall efficiency of the telescope's usage by the INAF community.

## INAF queue observing, 2022 January 13 - January 14

Observer: Ilya Ilyn, O. Kuhn

Telescope Operator: D. Garcia-Huerta

Astronomers from Italy: Felice Cusano

Instrument: PEPSI

### Summary

Due to the covid-19 pandemic situation these observations have been performed by LBTO personnel

through the indications of LBT Italian observers (F. Cusano, A. Rossi, S. Paiano and E. Marini) connected from Italy.

Nights with variable clouds and moon at 88%. First part of the night we did observation with PEPSI-POL.

Problem in pointing DG Tau, too close to the moon, it was not possible to observe.

Starting from 10:40 high wind prevents observations in the north-west and west direction. At 11:50 we closed for high wind.

Night duration (12 degree - twilight) 01:15 - 13:20 UT = **12 h 05m**

Observing time: 09h 58min (82.5%)\*

Weather time loss: 1h 07min (9.2%)\*

Technical time loss: 1h 00min (8.3%)\*

## Data Summary

Project_R UN	Objects	Instrument	Configuration	ExpTime /Time_tot	Images	Notes
Gangi	RY Tau	PEPSI-P OL	CD3,CD5-6	2.8h		
Gangi	RW Aur	PEPSI-P OL	CD4, CD5-6	2.8h		
Ripepi	ASASJ064152-0120.1	PEPSI-P FU	CD3-5	0.5h		S/N ~100 blue side
Ripepi	2MASSJ05580941+280 2335	PEPSI-P FU	CD3-5	0.85h		S/N ~127 blue side

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Clementini	Gaia980773034927503 104	PEPSI-P FU	CD2-4	0.55h/1. 1h	stopped in the middle of exp for high wind, S/N~48 & 90
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Bellazzini	G57596716778986136 32	PEPSI-P FU	CD3-6	0.44h	S/N ~64 & 102
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Bellazzini	G36965586466350837 76	PEPSI-P FU	CD3-6	0.44h	S/N ~62 & 96
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Bellazzini	G36163285544662969 60	PEPSI-P FU	CD3-6	0.44h	wind reaches 20km/h in the middle of the exp (9mins left), S/N ~ 156 & 255
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Bellazzini	G12261048310485524 48	PEPSI-P FU	CD3-6	0.33h	S/N ~ 116 & 163
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Bellazzini	G12357612876238792 96	PEPSI-P FU	CD3-6	0.23h	sky brightne ss 16th in the middle of exp (5mins left), we stopped the exp at 7mins (sky is ~4150 cnts and the target 4350). This object should be re-observed.
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Detailed log by Olga Kuhn at this link:

<https://drive.google.com/file/d/1qCYbVRITY03OzdIDf3JVRb0nZfsW3enV/view?usp=sharing>

## INAF queue observing, 2022 January 30 - January 31

Observer: Dave Thompson

Telescope Operator: Steve Allanson

Astronomers from Italy: Simona Paiano, Ester Marini (Felice Cusano and Andrea Rossi)

Instrument: MODS

### Summary

Due to the covid-19 pandemic situation these observations have been performed by LBTO personnel

through the indications of LBT Italian observers (F. Cusano, A. Rossi, S. Paiano and E. Marini) connected from Italy.

We plan to perform MODS observations during all night (in case of clouds or high seeing we plan to switch to PEPSI).

Mostly clear night, but high humidity at the sunset that prevents the observations.

The observations started from 07:00UT

Night duration (12 degree - twilight) 01:45UT - 13:20 UT = **12 h 05m**

Observing time: 6h 38min (54.9%)\*

Weather time loss: 5h 27min (45.1%)\*

Technical time loss: 0h 00min (0%)\*

## Data Summary

Project_R UN	Objects	Instrument	Configuration	ExpTime /Time_tot	Images	Notes
Paiano	4FGLJ0631.0+5626	MODS1+2	MODS1-2 dualgrating	1.5/1.5h	mods1[b0076-0078/r0083-0084]-mods2[b0075-0077/r0081-0083]	Seeing ~ 1.4-1"
Std	GD153	MODS1+2	MODS1-2 dualgrating		mods1[b0079-0081/r0088-0090]-mods2[b0078-0081/r0086-0088]	for Paiano

Marchesi	J1030	MODS1 +2	MOS dualgrating ID540449 - mods.28.LBTz3v2 .mms	4.3/4h	mods1[b00 82-0088/r0 094-0101]- mods2[b00 81-0087/r0 092-0098]	Seeing ~0.8-1. 5" (1.5" during the beginni ng of the 3rd exp, we took a 7th exp of 1200s)
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Paiano	4FGLJ1119.9-1 007	MODS1 +2	MODS1-2 dualgrating	1.5/1.5 h	mods1[b00 89-0091/r0 104-0106]- mods2[b00 88-0091/r0 102-0105]	Variabl e seeing, object very low: we took anothe r exposu re of 230s but only on MODS 2 becaus e MODS 1 was behind
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Paiano	4FGLJ1441.4-1 934	MODS1 +2	MODS1-2 dualgrating	1.0/1.0 h	mods1[b00 92-0094/r0 110-0112]- mods2[b00 92-0094/r0 109-0111]	Midpoi nt of the second exposu re was around
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### Additional comments:

Detailed log by Dave Thompson at this link:

[https://docs.google.com/document/d/104Fc\\_YeG0ojnp1EZTmj3kRbJ1oSCq-OjrLEE9Lse4S4/edit?usp=sharing](https://docs.google.com/document/d/104Fc_YeG0ojnp1EZTmj3kRbJ1oSCq-OjrLEE9Lse4S4/edit?usp=sharing)

### INAF queue observing, 2022 January 31 - February 1

Observer: Dave Thompson

Telescope Operator: Steve Allanson

Astronomers from Italy: Felice Cusano, Simona Paiano, Ester Marini

Instrument: MODS

### Summary

Due to the covid-19 pandemic situation these observations have been performed by LBTO personel

through the indications of LBT Italian observers (F. Cusano, A. Rossi, S. Paiano and E. Marini) connected from Italy.

We plan to perform PEPSI observations during all night because the sky is cloudy.

A power glitch in the afternoon is preventing the opening of the dome. At the sunset all the instruments and the telescopere are shut down.

The problem can not be solved before tomorrow, the telescope stay closed all the night.

Night duration (12 degree - twilight) 01:45UT - 13:20 UT = **12 h 05m**

Observing time: 0h 0min (%)

Weather time loss: 0h 0min (%)

Technical time loss: 12h 05min (100%)

## Data Summary

Project_RUN	Objects	Instrument	Configuration	ExpTime /Time_tot	Images	Notes
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## Additional comments:

Detailed log by Dave Thompson at this link:

## INAF queue observing, 2022 February 4 - February 5

Observer: B. Rothberg

Telescope Operator: D. Garcia-Huerta

Astronomers from Italy: Andrea Rossi, Simona Paiano

Instrument: MODS

## Summary

Due to the covid-19 pandemic situation these observations have been performed by LBTO personel

through the indications of LBT Italian observers (F. Cusano, A. Rossi, S. Paiano and E. Marini) connected from Italy.

Night starts clear. Only instruments available are MODS and LBC

Night duration (12 degree - twilight) 01:50 - 13:20 UT = **11 h 30\*m\***

Observing time: 11h 13min (%)\*

Weather time loss: 0h 0min (%)\*

Technical time loss: 0h 13 min (%)\*

## Data Summary

Project_RUN	Object s	Instru ment	Configuration	ExpTi me /Time _tot	Images	Notes
STD	GD71	MODS1 +2	dualgrating		mods1b.0017- 0019, mods1r.0019- 0021; mods2b.0003- 0005, mods2r.0005- 0007	

Biazzo	F7	MODS1 +2	ima g+r	4m	mods1b.0020- 0023, mods1r.0022- 0025; mods2b.0006- 0009, mods2r.0008- 0011	seeing ~1.8"
Giannini	Gaia18 eap	MODS1 +2	ima ugriz	10m	mods1b.0024- 0026, mods1r.0026- 0028; mods2b.0010- 0012, mods2r.0012- 0014	ima only,seeing 1-1.6 highly variable
Paiano	4FGLJ0 656	MODS1 +2	dualgrating slit 1.2"	0.9+0. 9h	mods1b.0027- 0032 , mods1r.0034- 0039; mods2b.0013- 0018, mods2r.0021- 0026	seeing 1-1.6" highly variable
Paiano	4FGLJ0 800	MODS1 +2	dualgrating slit 1.2"	0.5+0. 5h	mods1b.0033- 0035 , mods1r.0043- 0045; mods2b.0019- 0021, mods2r.0030- 0032	seeing 1-1.4" highly variable
Biazzo	F7	MODS1 +2	dualgrating MOS ID591958	0.5+0. 5h	mods1b.0036- 0038 , mods1r.0050- 0052; mods2b.0022- 0024, mods2r.0037- 0039	seeing 1-1.2"
Biazzo	F10	MODS1 +2	dualgrating MOS ID571232	0.5+0. 5h	mods1b.0039- 41 , mods1r.0056- 58; mods2b.0025-	

					27, mods2r.0043- 45	
Biazzo	F10	MODS1 +2	imaging		mods1b.0042- 0045 , mods1r.0059- 0062; mods2b.0028- 0031 , mods2r.0046- 0049	seeing <b>M1B</b> FWHM ~1.1"-1.2", <b>M1R</b> ~0.9"
Biazzo	F7	MODS1 +2	imaging		mods1b.0046- 0049 , mods1r.0063- 0067; mods2b.0032- 0035 , mods2r.0050- 00539	seeing ~1.3"
Paiano	4FGLJ0 910	MODS1 +2	dualgrating slit 1.2"	1h+1h	mods1b.0050- 55 , mods1r.0074- 79; mods2b.0036- 41 , mods2r.0062- 67	seeing 1.6" (but also up to 1.8")
Marchesi	J1030	MODS1 +2	MOS dualgrating ID 541604 mods.29.LBTz3 v2.mms	2h+2h	mods1b.0056- 61 , mods1r.0083- 88; mods2b.0042- 47 , mods2r.0071- 76	seeing = 0.9-1.1" , bias issue in <b>M1B</b> 0057-58-59-60 (see log for details) - <b>completed</b>
Rossi	GRB 210704 A	MODS1 +2	dualgrating slit 1.2"	1h+1h	mods1b.0062- 64 , mods1r.0092- 94; mods2b.0048- 50 , mods2r.0080- 82	seeing = 0.8", bias issue on <b>M1B</b>

Detailed log by Barry Rothberg at this link:

<https://drive.google.com/file/d/13H1bsBJAKgAbkAjAanRAW0toEkDGsprk/view?usp=sharing>

## INAF queue observing, 2022 February 5 - February 6

Observer: B. Rothberg <br />

Telescope Operator: D. Garcia-Huerta <br />

Astronomers from Italy: Ester Marini, Felice Cusano <br />

Instrument: MODS

### Summary

Due to the covid-19 pandemic situation these observations have been performed by LBTO personel<br />

through the indications of LBT Italian observers (F. Cusano, A. Rossi, S. Paiano and E. Marini) connected from Italy.

At the sunset the sky is clear.

Night duration (12 degree - twilight) 01:50 - 13:20 UT = **11 h 30\*m\*** <br />

Observing time: 10h 50min (94.3%)\* <br />

Weather time loss: h min (0%)\* <br />

Technical time loss: 0h 40min (5.7%)\*

### Data Summary

Project_R UN	Objects	Instrument	Configuration	ExpTime /Time_tot	Images	Notes
STD	GD71	MODS1+ 2	dualgrating		mods1/2b.0021-0023, mods1r.0017-0019; mods2r.0018-0020	for Biazzo
Biazzo	F1	MODS1+ 2	dualgrating MOS ID592556	1h/1h	mods1b.0024-0026, mods1r.0023-0025; mods2b.0024-0026, mods2r.0024-0026	Seeing ~ 1"

Biazzo	F1	MODS1+ 2	ima g+r	4m/4m	mods1b.0027-00 30, mods1r.0026-00 29; mods2b.0027-00 30, mods2r.0027-00 29	Seeing ~ 1", we missed the 1st dither position in mods2r but we decided not to redo it because we had persisten ce in the first image of LS_7
Biazzo	LS_7 ID6	MODS1+ 2	dualgrating	1h/1h	mods1b.0031-00 33, mods1r.0033-00 35; mods2b.0031-00 33, mods2r.0033-00 35	Seeing ~ 1-0.7"
Biazzo	LS_1 ID8-ID13	MODS1+ 2	dualgrating	1h/1h	mods1b.0034-00 36, mods1r.0039-00 41; mods2b.0034-00 36, mods2r.0039-00 41	Seeing ~ 0.7"
Biazzo	LS_4 ID12	MODS1+ 2	dualgrating	1h/1h	mods1b.0037-00 39, mods1r.0045-00 47; mods2b.0037-00 39, mods2r.0046-00 48	Seeing ~ 0.7

Biazzo	LS_5 ID47-ID71	MODS1+ 2	dualgrating	1.3h/1.3 h	mods1b.0040-00 43, mods1r.0051-00 54; mods2b.0040-00 42, mods2r.0053-00 56	Seeing ~ 0.8"
Rossi	GRB21102 3A	MODS1+ 2	dualgrating	2h/2h	mods1b.0044-00 45, mods1r.0058-00 59; mods2b.0043-00 44, mods2r.0060-00 61	Seeing ~ 0.8"
Saracco	RDCS091 0	MODS1+ 2	red grating	4h/11h	mods1r.0064-00 71; mods2r.0070-00 77	Seeing ~ 0.6"!, between the first two science images in MODS1 the relative offset is 1.5" and not 3" for a problem in MODS1 software
STD	Feige 34	MODS1+ 2	red grating		mods1r.0074-00 76; mods2r.0080-00 82	
STD	Feige 34	MODS1+ 2	dual		mods1b.0046-00 48, mods1r.0077-00 79; mods2b.0045-00 47,	

					mods2r.0083-00 85	
Paiano	4FGLJ104 7	MODS1+ 2	dualgrating	1.67h/2 h	mods1b.0049-00 , mods1r.00-00; mods2b.0048-00 , mods2r.00-00	last exp in twilight
Calibration	flat & arc	MODS1+ 2	dualgrating			Saracco, Biazzo, Rossi

Detailed log by Barry Rothberg at this link:

<https://drive.google.com/file/d/1CETHEUDO2akKRhh2cSfrR7-lo-pkF7m/view?usp=sharing>

## INAF queue observing, 2022 March 6 - March 7

Observer: B. Rothberg

Telescope Operator: J. Williams

Astronomers from Italy: Felice Cusano, Andrea Rossi

Instrument: MODS, PEPSI

### Summary

Due to the covid-19 pandemic situation these observations have been performed by LBTO personel

through the indications of LBT Italian observers (F. Cusano, A. Rossi, S. Paiano and E. Marini) connected from Italy.

At the sunset the sky is clear. External etemperature -6.80 C, mirror temperature ~-2 C, we decide to not start with LBC as the gradient in tempetature is to high to collimate.

Starting with MODS seeing ~2.5" at 02.05 UT. Switch to PEPSI at 3:45 for bad seeing. At 06:00 seeing improving ~1".

Night duration (12 degree - twilight) 02:15 - 12:45 UT = **10 h 30 m**

Observing time: 9h 25min (89.7%)\*

Weather time loss: 0h 0min (0%)\*

Technical time loss: 1h 05min (10.3%)\*

## Data Summary

Project_RUN	Objects	Instrument	Configuration	ExpTime/Time_tot	Images	Notes
Standard	GD 71	MODS 1-2	red grating, dual grating			seeing ~2.5"
Giannini	Gaia20bdk	MODS 1-2	dual grating	1h/0.5h		seeing ~ 2", 2Xexp time
Ripepi	ASASJ062050+0002.5	PEPSI	cd3-5	0.5h/0.5h		seeing ~1.8" S/N~200
Ripepi	ASAS J064152-0120.1	PEPSI	cd3-5	0.5h/0.5h		seeing ~1.8" S/N~150
Bellazzini	G876358870971624320	PEPSI	cd3-6	0.5h/0.5h		
Ripepi	ASASJ062050+0002.5	PEPSI	cd3-5	0.5h/0.5h		seeing ~1.2" S/N~200
Ripepi	ASAS J064152-0120.1	PEPSI	cd3-5	0.5h/0.5h		seeing ~1.1" S/N~150
Bellazzini	G909457645597008640	PEPSI	cd3-6	0.5h/0.5h		seeing 1.7"

Bellazzeni	G58885678812 9452160	PEPSI	cd3-6	0.5h/0.5h		S/N~170(red),100(blue)
Bellazzeni	G74366238602 8080616	PEPSI	cd3-6	0.5h/0.5h		S/N~180(red),90(blue)
Bellazzeni	G78246580493 4963328	PEPSI	cd3-6	0.5h/0.5h		S/N~150(red),90(blue)
Palazzi	SLSN2020abjc	MODS 1-2	dual grating	0.9h/2 h	mods1-2b.2022 0307.0020-002 1, mods1-2r.2022 0307.0045-004 6	seeing~ 1.2-1.5", we did only 2 exps and 2nd exposures are short (we hit 30deg limit)
Rossi	<b>GRB211024B</b>	MODS 1-2	dual grating	1.3/1. 3h	mods1-2b.2022 0307.0022-002 3, mods1-2r.2022 0307.0050-005 1	seeing~1.2"
Rossi	<b>GRB220219B</b>	MODS 1-2	dual grating	1.5/1h	mods1-2b.2022 0307.0024-002 6, mods1r.202203 07.0056-0058, mods2r.202203 07.0055-0057	seeing~0.8-1"
Rossi	<b>GRB220219B</b>	MODS 1-2	imaging	0.13/0 .13h	mods1-2b.2022 0307.0027-002 8, mods1r.202203 07.0059-0060, mods2r.202203 07.0058-0059	seeing~0.8"

Standard	BD+33 2642	MODS	red grating, dual grating	mods1-2b.2022 0307.0029-003 1, mods1r.202203 07.0063-0065, mods2r.202203 07.0062-0064	seeing ~0.7"
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Detailed log by Barry Rothberg at this link:

[https://drive.google.com/file/d/1sQEH0ngEY9Ony7\\_\\_nTDhG-opBySWLOvw/view?usp=sharing](https://drive.google.com/file/d/1sQEH0ngEY9Ony7__nTDhG-opBySWLOvw/view?usp=sharing)

## INAF queue observing, 2022 March 7 - March 8

Observer: B. Rothberg

Telescope Operator: J. Williams

Astronomers from Italy: Andrea Rossi, Simona Paiano

Instrument: LUCI, LBC

### Summary

Due to the covid-19 pandemic situation these observations have been performed by LBTO personel

through the indications of LBT Italian observers (F. Cusano, A. Rossi, S. Paiano and E. Marini) connected from Italy.

At the sunset the sky is clear. At UT 08:44 Night is called for snow.

Night duration (12 degree - twilight) 02:15 - 12:45 UT = **10 h 30 m**

Observing time: 4h 20min (41.3%)\*

Weather time loss: 6h 5min (57.9%)\*

Technical time loss: 0h 5min (0.8%)\*

### Data Summary

Project_R UN	Objects	Instrument	Configuration	ExpTime/Time_tot	Images	Notes
CALIB	DARKS	LUCI1+2				Mannucci, Rossi, Izzo
CALIB	FLAT ima	MODS1+2	ugriz			Rossi, Palazzi
Mannucci	J0732	LUCI AO			luci1.00 50-59	FWHM<0.15" stop after 20min, seeing blow up
Telluric	HD53489	LUCI1+2	zJ+HK			
Giannini	Gaia20bdk	LUCI1+2	zJ+HK	0.5h		DIMM 1.5-2", 1 exp more, see log
Giannini	Gaia20bdk	LUCI1+2	JHKs	0.1h		DIMM 1.5-2"
Izzo	SN2022djw	LUCI1+2	JH	1.1h		DIMM~2"
Bellazzini	G77368067266952 2304	PEPSI		0.5h/0.5h		S/N~130

Detailed log by Barry Rothberg at this link:

<https://drive.google.com/file/d/1hEQ1HB1Fz1R9MFuEu6DmXVZugdUY4ldR/view?usp=sharing>

## INAF queue observing, 2022 March 8 - March 9

Observer: B. Rothberg

Telescope Operator: S. Allanson

Astronomers from Italy: Felice Cusano, Simona Paiano, Ester Marini

Instrument: LUCI, LBC

### Summary

Due to the covid-19 pandemic situation these observations have been performed by LBTO personel

through the indications of LBT Italian observers (F. Cusano, A. Rossi, S. Paiano and E. Marini) connected from Italy.

At the sunset the sky is clear. Conditions look good, ext temperature -3.1C, mirror -4.4C.

Night duration (12 degree - twilight) 02:15 - 12:45 UT = **10 h 30 m**

Observing time: 9h 50min (94%)\*

Weather time loss: 0h 0min (0%)\*

Technical time loss: 0h 40min (6%)\*

### Data Summary

Project_RUN	Objects	Instrument	Configuration	ExpTime/Time_tot	Images	Notes
Mannucci_A O_1	J0732	LUCI1-A O	Ks,H	0.5h/0. 5h	luci1.00 26-0044	seeing~1", fwhm~0.07"
Mannucci_A O_1	J0812-00 40	LUCI1-A O	Ks,H	0.5h/0. 5h	luci1.00 45-0062	seeing~0.9", fwhm~0.092"

Mannucci_A O_1	J0812+20 07	LUCI1-A O	Ks,H	0.5h/0. 5h	luci1.00 63-0084	seeing~0.8", fwhm~0.08"
Mannucci_A O_1	J0927	LUCI1-A O	Ks,H	0.7h/0. 5h	luci1.00 85-0102	seeing~0.8", fwhm~0.16" then after gain adj fwhm~0.08"
Mannucci_A O_1	J0950+43 29	LUCI1-A O	Ks,H	0.5h/0. 5h	luci1.01 13-0130	seeing~1", fwhm~0.1"
Rossi	GRB 211211A	LUCI1+2	Ks	h	luci1.01 31-189, luci2.00 08-0067	fwhm~0.8" DIMM~1"
Vito	J1641	LBCb+r	r+z	0.5+0.5 h		first OB: DIMM 0.9-1", FWHM ~0.7" on red, see log for trails
Vito	J1641	LBCb+r	r+z	0.2+0.2 h		second OB, interrupted, FWHM ~0.9" on red
Giunta	twilight_fi eld	LBCb+r	g+i			morning_search_1 .xml
Giunta	twilight_fi eld	LBCb+r	g+r			morning_search_2 .xml
Giunta	twilight_fi eld	LBCb+r	g+z			morning_search_3 .xml

Giunta	twilight_fi eld	LBCb+r	g+i	morning_search_1 .xml again, we have time
CALIB	SKYFLAT S	LBCb+r	r+z	g (blue) and r,i (red) already in archive from pre-INAF nights

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Detailed log by Barry Rothberg at this link:

<https://drive.google.com/file/d/1bjFuNGqVUdNSPwm5feWZDTglCqQOMuJJ/view?usp=sharing>

## INAF queue observing, 2022 Apr 02 - Apr 03

Observer: A. Cardwell

Telescope Operator: S. Allanson

Astronomers from Italy: Simona Paiano, Ester Marini, Andrea Rossi

Instrument: MODS, LBC

### Summary

Due to the Covid-19 pandemic situation these observations have been performed by LBTO personnel

through the indications of LBT Italian observers (F. Cusano, A. Rossi, S. Paiano and E. Marini) connected from Italy.

Night duration (12 degree - twilight) 02:35 - 12:10 UT = **9 h 35 m**

Observing time: 9h 25min (98%)\*

Weather time loss: 0h 0min (0%)\*

Technical time loss: 0h 10min (2%)\*

At the sunset the sky is clear.

Starting with MODS seeing 1" at 02:09 UT.

## Data Summary

Project_R UN	Objects	Instrument	Configuration	ExpTime /Time_tot	Images	Notes
CALIBRATION	BIAS	LBC1-2	BIAS			
CALIBRATION	FLAT	MODS1-2	slitflat red grating 5arcsec			for Saracco
CALIBRATION	FLAT	MODS1-2	slitless red grating			for Saracco
CALIBRATION	ARCS	MODS1-2	arcs red grating			for Saracco
Standard	Feige34	MODS1-2	red grating, dual grating			for Saracco, seeing ~1"
Saracco	RDCS0910	MODS1-2	red grating	6.5/11h	mods[1-2]r.20 220403.0026-0038	seeing 0.7"- exp11, 12: ~0.5mag extinction,

					took 1 more
Bellazzini	G75937959550910 9632	PEPSI1- 2	CD3-6	25/15m in each side	SNR 165 on CD6; cirrus
Bellazzini	G15802912332585 97888	PEPSI1- 2	CD3-6	30/15m in each side	SNR 152 on CD6; cirrus
Bellazzini	G15655157211273 40928	PEPSI1- 2	CD3-6	20/15m in each side	SNR 142 on CD6; thin clouds
Bellazzini	G16776498955219 07200	PEPSI1- 2	CD3-6	20/15m in each side	SNR 94 on CD6; thin clouds
Bellazzini	G11561587803725 65120	PEPSI1- 2	CD3-6	40/15m in each side	SNR 131 on CD6; thin clouds
Bellazzini	G44532207304383 73504	PEPSI1- 2	CD3-6	40/15m in each side	SNR 150 on CD6; thin clouds

Rainer	Kepler-14	PEPSI1-2	CD1-4	20/7min each side	SNR 160 on CD5; clouds
Rainer	Kepler-14	PEPSI1-2	CD2-5	25/7min each side	SNR 240; thin clouds
Rainer	Kepler-14	PEPSI1-2	CD3-6	25/7min each side	SNR~120 clouds
CALIBRATION	FLAT	MODS1-2	MOS flat red grating		for Saracco
CALIBRATION		PEPSI1-2			
CALIBRATION	BIAS	MODS1-2	3x3,8x3		

Detailed log by Andrew Cardwell at this link:

<https://drive.google.com/file/d/1Ne2ufXcSUvasQzUaAJ6-8DJ9rghJT2Ou/view?usp=sharing>

## INAF queue observing, 2022 Apr 03 - Apr 04

Observer: A. Cardwell

Telescope Operator: S. Allanson

Astronomers from Italy: Andrea Rossi, Simona Paiano (Ester Marini)

Instrument: LBC

## Summary

Due to the Covid-19 pandemic situation these observations have been performed by LBTO personel

through the indications of LBT Italian observers (F. Cusano, A. Rossi, S. Paiano and E. Marini) connected from Italy.

Night duration (12 degree - twilight) 02:35 - 12:10 UT = **9 h 35 m**

Observing time: 09 h 35 min (100%)\*

Weather time loss: 00 h 00 min (0%)\*

Technical time loss: 00 h 00 min (0%)\*

At the sunset the sky is clear.

Starting with LBC.

## Data Summary

Project_R UN	Objects	Instrument	Configuration	ExpTime /Time_tot	Images	Notes
CALIBRATION	SKYFLATS	LBC1-2	g,r PA0			first g-flat is wrong, see log,
CALIBRATION	SKYFLATS	LBC1-2	g,r PA180			
Giunta	2010_XB11	LBC1-2	griz	0.16h+0.16h		DIMM~0.8"
Giunta	Atira	LBC1-2	griz	0.06+0.06h		DIMM~1"
Rossi	GRB 220403B	LBC1-2	griz	0.3+0.3h		DIMM~1.2"

Nardiello	NGC505 3	LBC1-2	UVBI	B+I->0.75h+0.75h, U+V=1.70h+1.70h	FWHM~1"; ~1.2" in U; see log for some bad images (more detailed) and Notes at the end of this page
Vito	J1641+3 755	LBC1-2	r-z	1.5h+1.5h	FWHM ~ 1" both sides (some fluctuations up to 1.2"), one bad image (see log and Notes section at the end of this page for more detailed)
Giunta	2018-JB3	LBC1-2	griz		FWHM ~ 1.2" in blue, 1" in red
CALIBRATI ON	SKYFLA TS	LBC1-2	r,z PA0		lbc.20220404.12214 is scrambled. At least 5 good flats!
CALIBRATI ON	SKYFLA TS	LBC1-2	r,z PA180		3 good flats

Detailed log by Andrew Cardwell at this link:

<https://drive.google.com/file/d/1Xt8KziZTy3nfux9Lel-tLFP0OKrez-or/view?usp=sharing>

## INAF queue observing, 2022 Apr 04 - Apr 05

Observer: A. Cardwell

Telescope Operator: S. Allanson

Astronomers from Italy: Felice Cusano, Simona Paiano (Ester Marini)

Instrument: LBC

## Summary

Due to the Covid-19 pandemic situation these observations have been performed by LBTO personel

through the indications of LBT Italian observers (F. Cusano, A. Rossi, S. Paiano and E. Marini) connected from Italy.

At the sunset the sky is clear.

Starting with LBC.

Night duration (12 degree - twilight) 02:35 - 12:10 UT = **9 h 35 m**

Observing time: 9h 35min (100%)\*

Weather time loss: 0h 0min (0%)\*

Technical time loss: 0h 0min (0%)\*

## Data Summary

Project_R UN	Objects	Instrument	Configuration	ExpTime /Time_to t	Images	Notes
Calibration	flat	LBC-B, LBC-R	r+i			r+i good flat
Giunta	2006WE4	LBC-Bin o	griz	0.17h+0. 17h		
Rossi	<b>GRB180618A</b>	LBC-Bin o	r+z	0.7h+7h		DIMM~1.3",fwhm~1 .1"

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Nardiello	NGC5053	LBC-Bin o	B+I	0.5h+0.5 h	fwhm~0.7-1.1" , see Notes at the end of this page
Nardiello	NGC5053	LBC-Bin o	V+U	1.14h+1. 14h	fwhm~1" , see Notes at the end of this page
Rossi	AT2022cmc	LBC-Bin o	Ugriz	0.36h+0. 30h	FWHM Seeing = 1.2-0.85" in U_spec, 0.95-0.9"-0.75 in r, 0.8" in z, 0.9-0.8" in g, 0.65" in i.
Vito	J1641+3755	LBC-Bin o	g+i	1.5h + 1.5h	Seeing~1" except for the last 25 exposures (from lbc.20220405.0959 51.fits - lbc.20220405.095 816.fits ) for which the seeing was not optimal (around 1.1 but variable up to 1.6),
Rossi	<b>GRB220219B</b>	LBC-Bin o	r+i	0.14h + 0.14h	FWHM~1"
Rossi	<b>GRB220219B</b>	LBC-Bin o	g+z	0.14h + 0.14h	FWHM~1"
Giunta	Search_morni ng(1-2-3-1)	LBC-Bin o	griz	0.11h + 0.11	1.2" in g, 1" in i
CALIBRAT ION	SKYFLATS	LBC-Bin o	B_Bess + z at PA=0		Some clouds - 4 good flats

CALIBRAT ION	SKYFLATS	LBC-Bin o	B_Bess + z at PA=180	Some clouds
CALIBRAT ION	SKYFLATS	LBC-Bin o	B_Bess + z at PA=0	Some clouds

Detailed log by Andrew Cardwell at this link:

<https://drive.google.com/file/d/1SLJBE3mDWD1A8tqL9U5ivu5l1RqfLEnq/view?usp=sharing>

## INAF queue observing, 2022 Apr 18 - Apr 19

Observer: A. Cardwell

Telescope Operator: S. Allanson

Astronomers from Italy: Felice Cusano, Simona Paiano (Ester Marini)

Instrument: LUCI

### Summary

Due to the Covid-19 pandemic situation these observations have been performed by LBTO personnel

through the indications of LBT Italian observers (F. Cusano, A. Rossi, S. Paiano and E. Marini) connected from Italy.

At the sunset the sky is cover by clouds. We start with bino LUCI and backup programs. We can not use PEPSI for maintenance.

LBCB is offline due to some problems.

Night duration (12 degree - twilight) 02:55 - 11:55 UT = **9 h 00 m**

Observing time: 5 h 18 min (59%)\*

Weather time loss: 3 h 42 min (41%)\*

Technical time loss: 0 h 00 min (0%)\*

## Data Summary

Project_ RUN	Objects	Instrum ent	Configura tion	ExpTim e /Time_t ot	Images	Notes
Calibration						
Palazzi	HIP42853	LUCI1-2	zj-HK			telluric Palazzi
Palazzi	SLSN2020 abjc	LUCI1-2	zJ	1.2h+1.2 h		4 exp more for clouds, seeing~1"
Palazzi	SLSN2020 abjc	LUCI1-2	Hk	1.3h+1.3 h	luci1.20220419.00 50.fits-luci1.20220 419.0091.fits /luci2.20220419.00 50.fits-luci2.20220 419.0091.fits	seeing has been slowly degrading (up to 1.5"), 4 exp more for clouds
Palazzi	SLSN2020 abjc	LUCI1-2	J, H imaging		luci1.20220419.00 92.fits-luci1.20220 419.0119.fits / luci2.20220419.00 92.fits-luci2.20220 419.0119.fits	High cloudiness !!
Izzo	SN2022gn z	LUCI1-2	J, H imaging	0.35h+0. 35h	luci1.20220419.01 20.fits-luci1.20220 419.0144.fits / luci2.20220419.01 20.fits-luci2.20220 419.0144.fits	(12 exp in J and 13 exp in H) seeing=1. 5"-2"

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Calibratio n	LUCI1-2	domeflat H+J fraternal
Calib-Pal azzi	MODS1 -2	dual-arcs
Calib-Pal azzi	MODS1 -2	dual-slites s
Calib-Pal azzi	LUCI1-2	flats-arcs HK200-1"-f raternal
Calib-Pal azzi	LUCI1-2	flats J H - fraternal
Calib-Pal azzi	MODS1 -2	dual-flat 1.2"
Calib-Pico ncelli	LUCI1-2	flatarcs-zJ 200-lambda a1p17 fraternal
Calib-Pico ncelli	LUCI1-2	flatarcs-H K200-lambda da1p93 fraternal
Calib-Poll etta	LUCI1-2	flatarcs- id963032 fraternal

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Calib-Man nucci	MODS1 -2	flats 0.6"
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Detailed log by Andrew Cardwell at this link:

<https://drive.google.com/file/d/1RpUVZNYZEMjSV9DEGCoaoz0-LwTJS2rG/view?usp=sharing>

## Notes

### INAF queue observing, 2022 Apr 19 - Apr 20

Observer: A. Cardwell

Telescope Operator: S. Allanson

Astronomers from Italy: Andrea Rossi, Simona Paiano (Ester Marini)

Instrument: LUCI

## Summary

Due to the Covid-19 pandemic situation these observations have been performed by LBTO personel

through the indications of LBT Italian observers (F. Cusano, A. Rossi, S. Paiano and E. Marini) connected from Italy.

At sunset the sky is clear but high wind guts keep us closed. We can not use PEPSI for maintenance.

LBCB is recovered.

Night duration (12 degree - twilight) 02:55 - 11:55 UT = **9 h 00 m**

Observing time: 1 h 0 min (%)\*

Weather time loss: 8 h 0 min (%)\*

Technical time loss: 0 h 0 min (%)\*

## Data Summary

Project_R UN	Objects	Instrument	Configuration	ExpTime /Time_tot	Images	Notes
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Calibration	Darks	LUCI1-2				for Piconcelli, Polletta, Palazzi, Izzo
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Izzo	SN2021y mj	LUCI1-2	J, H imaging	h+h	luci1.20220420.0206.fits-luci1.20220420.0218.fits / luci2.20220420.0071.fits-luci2.20220420.0083.fits	seeing=1.5" and improved during the observation - some clouds at the beginning of the observation
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Detailed log by Andrew Cardwell at this link:

<https://drive.google.com/file/d/1EauUmXR8M6G-zG5pjDQTTZXQO4YI7cjU/view?usp=sharing>

## Notes

INAF queue observing, 2022 Apr 20 - Apr 21

Observer: A. Cardwell

Telescope Operator: S. Allanson

Astronomers from Italy: Simona Paiano - Ester Marini, Andrea Rossi

Instrument: LUCI

## Summary

Due to the Covid-19 pandemic situation these observations have been performed by LBTO personel

through the indications of LBT Italian observers (F. Cusano, A. Rossi, S. Paiano and E. Marini) connected from Italy.

At the sunset the sky is clear. The wind is lower (with respect to the previous night) but we still have some wind gusts. We can open but we have limitation about the direction of pointing. We switched to LBCs at ~6:30UT.

Night duration (12 degree - twilight) 02:55 - 11:55 UT = **9 h 00 m**

Observing time: 8h 40 min (96%)\*

Weather time loss: 0h 5 min (1%)\*

Technical time loss: 0h 15 min (3%)\*

## Data Summary

Project_ RUN	Objects	Instrum ent	Configura tion	ExpTime /Time_to t	Images	Notes
lzzo	SN2022e wv	LUCI1-2	J, H imaging	1.2h/1.2h	luci1/2.20220421 .0001-0036.fits	seeing ~ 0.8-0.7"
lzzo	SN2022g nz	LUCI1-2	J, H imaging	1.0h/1.0h	luci1/2.20220421 .0037-0072.fits	seeing ~ 0.7"
Telluric	HIP68868	LUCI1-2	G200 HKspec 1"		luci1/2.20220421 .0073-0075.fits	for Piconcelli

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Piconcelli	A6 - J1433	LUCI1-2	HKspec	1.2/1h	luci1/2.20220421.0084-0093.fits	seeing ~0.7" completed
Vito	J1641+37 55	LBC1-2	g+i	0.7+0.7/2 +2h		1.5 times 3rd script, but seeing>1" for half script
Rossi	AT2022c mc	LBC1-2	ugriz	0.36h+0.30h		DIMM 1.5-2"
Rossi	GRB2204 03B	LBC1-2	r+z	0.3+0.3h		DIMM ~1.5-2"
Rossi	GRB2204 08A	LBC1-2	r+z	0.15+0.15h		DIMM ~1.2-1.5"
Vito	J1641+37 55	LBC1-2	g+i	0.25+0.25h		seeing ~1"
Giunta	Twilight_F ield	LBC1-2	griz	0.04h per filter		

Detailed log by Andrew Cardwell at this link:

<https://drive.google.com/file/d/1TCMgVWKRk7g6scDKGFrd8tg6bigb1qhL/view?usp=sharing>

## Notes

### INAF queue observing, 2022 Apr 21 - Apr 22

Observer: A. Cardwell

Telescope Operator: S. Allanson

Astronomers from Italy: Felice Cusano, Ester Marini

Instrument: LBC

## Summary

Due to the Covid-19 pandemic situation these observations have been performed by LBTO personnel

through the indications of LBT Italian observers (F. Cusano, A. Rossi, S. Paiano and E. Marini) connected from Italy.

At the sunset the sky is clear. The wind is at limit for opening (~18 m/s).

We can open, but we have limitation about the direction of pointing. We can not point to the south so we can not perform the LUCI1-AO program. We start with LBC.

Night duration (12 degree - twilight) 02:55 - 11:55 UT = **9 h 00 m**

Observing time: 5h 10min (58%)\*

Weather time loss: 3h 50min (42%)\*

Technical time loss: 0h 0min (0%)\*

## Data Summary

Project_RUN	Objects	Instrument	Configuration	ExpTime/Time_tot	Images	Notes
Calibration	sky flat	LBC-Bino				U,B-Bessel -V,I-Bessel
Nardiello - Cadelano	NGC5024	LBC-Bino	B-Bessel-I-Bessel	0.75h+0.75h		BI-1, 2, 3 done
Nardiello - Cadelano	NGC5024	LBC-Bino	U-Bessel-V-Bessel	1.12h+1.12h		UV-1,2 done; some thin clouds during UV-2

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Vito	J1641	LBC-Bino	g-i sloan	0.33h/1h	seeing out of the requirement (1.2-1.4"), need to be redone
Rossi	grb220403 B	LBC-Bino	r+z sloan	0.3h+0.3h	seeing~1.3"
Rossi	grb220408 A	LBC-Bino	r+z sloan	0.16h+0.16h	seeing ~ 1.1"-1.4", 10 to 20 exposures done, we stopped due to wind

Detailed log by Andrew Cardwell at this link:

<https://drive.google.com/file/d/1B1OW9Ty08HJzceCtomKvUSkgpZQbu2cZ/view?usp=sharing>

## Notes

### INAF queue observing, 2022 Apr 22 - Apr 23

Observer: A. Cardwell

Telescope Operator: S. Allanson

Astronomers from Italy: Andrea Rossi, Felice Cusano

Instrument: LBC

## Summary

Due to the Covid-19 pandemic situation these observations have been performed by LBTO personel

through the indications of LBT Italian observers (F. Cusano, A. Rossi, S. Paiano and E. Marini) connected from Italy.

At the sunset the sky is clear. High wind with guts above 30 m/s prevent us to open.

Night duration (12 degree - twilight) 02:55 - 11:55 UT = **9 h 00 m**

Observing time: 0h 0min (0%)\*

Weather time loss: 9h 0min (100%)\*

Technical time loss: 0h 0min (0%)\*

## Data Summary

Project_RUN	Objects	Instrument	Configuration	ExpTime /Time_tot	Images	Notes
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Detailed log by Andrew Cardwell at this link:

<https://drive.google.com/file/d/1QCX6RBmKIMHN1czCPb9cum6hMxy8efHa/view?usp=sharing>

## Notes

### INAF queue observing, 2022 Apr 23 - Apr 24

Observer: A. Cardwell

Telescope Operator: S. Allanson

Astronomers from Italy: Felice Cusano, Ester Marini

Instrument: LBC

## Summary

Due to the Covid-19 pandemic situation these observations have been performed by LBTO personel

through the indications of LBT Italian observers (F. Cusano, A. Rossi, S. Paiano and E. Marini) connected from Italy.

At sunset the sky is clear. We do not have internet connection to the mountain as the high wind of yesterday damaged the microwave antenna.

For this reason we can not do LUCI-AO observations as there is no AO support. The support astronomer A. Cardwell is driving to the mountain to perform regular observations with LBC. We start with LBC-bino.

Night duration (12 degree - twilight) 02:55 - 11:55 UT = **9 h 00 m**

Observing time: 9h 00min (100%)\*

Weather time loss: 0h 00min (0%)\*

Technical time loss: 0h 00min (0%)\*

## Data Summary

Project_RUN	Objects	Instrument	Configuration	ExpTime/Time_tot	Images	Notes
Calibration	flat fields	LBC-Bino				r+r
Palazzi	SLSN2020ab jc	LBC-Bino	ug+ri			completed
Nardiello	NGC5024	LBC-Bino	U-Bessel + V-Bessel	1.68h+1.68 h		UV-3,4,5 done, fwhm~1-1.2 ",~0.8-1" (UV-5), for UV-5 see notes b
Nardiello	NGC5024	LBC-Bino	B-Bessel + I-Bessel	0.5h+0.5h		BI-4,5 done, seeing~0.8" (BI-5),~1"(B I_4), for BI-5 see note a

vito	J1641	LBC-Bino	g+i sloan	0.5h+0.5h	seeing~0.8-1", 1.2" from 2/3 part of the observation to the last two exposures when it was ~1"
Nardiello	NGC6341	LBC-Bino	B-Bessel + I-Bessel	0.5h+0.5h	BI-1,2 done but in BI-1 seeing very unstable, from 1.1" to 1.5", ~0.8" in BI-2
Giunta	AO_I	LBC-Bino	g+i sloan	0.12h+0.12h	Slight jump in initial exposure, we repeated it
Giunta	AO_J	LBC-Bino	g+i sloan	0.09h+0.09h	excellent seeing
Nardiello	NGC6341	LBC-Bino	U-Bessel + V-Bessel	1.12h+1.12h	UV-1,2 done, seeing ~1" in UV-1 (satellite trail in lbcr.095806), ~0.8" in UV-2

Giunta	twilight field	LBC-Bino	g+i,r+z	0.13h+0.13h	we run the scrip twice and stopped at 50% of the second (20k background)
calibration	flat fields	LBC-Bino			r+z PA=0 PA=180

Detailed log by Andrew Cardwell at this link:

[https://drive.google.com/file/d/15GaSpu\\_ysCK2qjH-YKIDMhLisLMe6GTJ/view?usp=sharing](https://drive.google.com/file/d/15GaSpu_ysCK2qjH-YKIDMhLisLMe6GTJ/view?usp=sharing)

## Notes

a- Slight image jump in lcb.20220424.060013 and lbc.20220424.060011. Possibly due to TMS?

b- lcb.063505 is trailed, Andrew and Steve believe it was a guiding (or more likely lack of guiding) issue, see the log for details.

## INAF queue observing, 2022 Apr 24 - Apr 25

Observer: A. Cardwell

Telescope Operator: S. Allanson

Astronomers from Italy: Andrea Rossi, Ester Marini

Instrument: LUCI - LBC

## Summary

Due to the Covid-19 pandemic situation these observations have been performed by LBTO personel

through the indications of LBT Italian observers (F. Cusano, A. Rossi, S. Paiano and E. Marini) connected from Italy.

At sunset the sky is clear.

Night duration (12 degree - twilight) 02:55 - 11:55 UT = **9 h 00 m**

Observing time: 8h 40min (96.3%)\*

Weather time loss: 0h 0min (0%)\*

Technical time loss: 0h 20min (3.7%)\*

## Data Summary

Project_ RUN	Objects	Instrume nt	Configura tion	ExpTim e /Time_t ot	Images	Notes
Palazzi	SLSN2020 abjc	LUCI1+2	J+H imaging	0.5hrs	luci1.0005 -19,luci2.0 005-19	FWHM<0.7" completed
Gilli	J1030 FRII	LUCI1+S OUL	Ks			FWHM on AOstar <~0.09"
Rossi	GRB21102 4B	LBC-Bino	r+z sloan	0.33h+0. 33h		seeing~1" , a bit of trail in the first exp
Rossi	GRB21102 4B	LBC-Bino	g+i sloan	0.24h+0. 24h		seeing~ we did 5/8 of the exp
Nardiello	NGC6341	LBC-Bino	B-Bessel + I-Bessel	0.75h+0. 75h		BI-3,4,5 done seeing~1"; ~0.8" in BI-5
Nardiello	NGC6341	LBC-Bino	U-Bessel + V-Bessel	1.68h+1. 68h		UV-3,4,5 done seeing~0.9", see note 3 (UV-3)

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Giunta	twilight field - search morning_1 -2-3	LBC-Bino	griz	0.09h+0. 09h	seeing~1" in g, ~0.8" in i
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Calibration	Flat fields	LBC-Bino	U_Spec+r	PA=0,
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Calibration	Flat fields	LBC-Bino	r+r	PA=0,180
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Detailed log by Andrew Cardwell at this link:

[https://drive.google.com/file/d/1Zxtt9KKV2PHT\\_myRKyDAK3bk-uPoEOuR/view?usp=sharing](https://drive.google.com/file/d/1Zxtt9KKV2PHT_myRKyDAK3bk-uPoEOuR/view?usp=sharing)

## Notes

1-We keep seeing the BCG galaxy in all images except: Gilli LUC1...67,75,85 should be discarded. Have a look also to images 20...23 maybe they are not good.

2-Rossi g+i: Jump in exposure lbc.20220425.075210. No sign of a jump in the corresponding lbc exposure.

3-Too few downloaded pixels error in lbc.20220425.085441. The positions of chips 3 and 1 have been flipped in the readout, with the exception of the bottom few rows or each.

## INAF queue observing, 2022 May 26 - May 27

Observer: B. Rothberg

Telescope Operator: J. Williamns

Astronomers from Italy: Felice Cusano , Simona Paiano

Instrument: LBC

## Summary

Due to the Covid-19 pandemic situation these observations have been performed by LBTO personel

through the indications of LBT Italian observers (F. Cusano, A. Rossi, S. Paiano and E. Marini) connected from Italy.

At the sunset the sky is clear.

Night duration (12 degree - twilight) 03:20 - 11:10 UT = **7 h 50 m**

Observing time: 07h 25min (%)\*

Weather time loss: 00h 00min (%)\*

Technical time loss: 00h 25min (%)\*

## Data Summary

Project_RUN	Objects	Instrument	Configuration	ExpTime /Time_tot	Images	Notes
Calibration - Izzo	DARK	LUCI1-2 IMA	dark_20NDIT+24NDITx2p51_bino			
Calibration - Piconcelli	DARK	LUCI1-2 LS				
Calibration - Mannucci AO	DARK	LUCI1-AO				
Calibration	Bias	LBC-Bino				25 LBC-B 25 LBC-R / Seeing noise on the LBC-R biases
Calibration -Rossi/Palazzi /Paiano	Bias	MODS 1-2 LS	bias1kx1k, bias3kx3k, bias8kx3k			
Calibration -Rossi/Palazzi /Paiano	Flats	MODS 1-2 LS	dual_slitless			
Calibration -Rossi/Palazzi /Paiano	Arcs	MODS 1-2 LS	dual_arcs,			
Calibration	sky flats	LBC-Bino	U-Spec, g-sloan - z-sloan, I-Bessel			
Palazzi	SLSN2020abjc	LBC-Bino	u,g - r,z	0.35h+0.35h		~seeing 0.8-1"
Nardiello	NGC5272	LBC-Bino	B - I			seeing~0.6-1", problem with LBC software 5-6images in the same position, we were

					not able to dither, changing target
Nardiello	NGC5466	LBC-Bi no	B - I	0.75h+0 .75h	seeing~0.8", BI-1 done seeing~0.75", BI-2 done seeing=0.7", BI-3 done seeing=0.8"
Nardiello	NGC5466	LBC-Bi no	U - V	1.71h+1 .71h	seeing~0.8", UV-1 done seeing~0.6", UV-2 seeing=0.75", UV-3 done seeing=0.8" (LBCR 074438 - double images - jump during exposure, no issues in the LBCB image)
Vito	J1641	LBC-Bi no	g+i	1.0h+1.0h	(g+i)_1-> done, seeing~0.7", LBCR-08 5828 Scrambled image, (g+i)_2->, seeing~0.7" -

seeing stable during the whole observation

Giunta	Twilight field	LBC-Bino	0.25h+0.25h	search_twil_1, search_twil_2, search_twil_3 are done!
Calibration	Skyflats	LBC-Bino		

Detailed log by Barry Rothberg at this link:

<https://docs.google.com/document/d/1bWS9jCLno5QnijWL6H4GAqh0rlqUhmQXzruRGIDjTA8/edit?usp=sharing>

## INAF queue observing, 2022 July 04 - July 05

Observer: A. Cardwell

Telescope Operator: David Gonzalez Huerta

Astronomers from Italy: Simona Paiano, Ester Marini

Instrument: LBC

### Summary

Due to the Covid-19 pandemic situation these observations have been performed by LBTO personel

through the indications of LBT Italian observers (S. Paiano and E. Marini) connected from Italy.

At the sunset the sky is cloudy with 100% humidity.

Night duration (12 degree - twilight) 03:35 - 11:15 UT = **7 h 50 m**

Observing time: 0h 0min (0%)\*

Weather time loss: 7h 50min (100%)\*

Technical time loss: 0h 0min (0%)\*

### Data Summary

Project_RUN	Objects	Instrument	Configuration	ExpTime/Time_tot	Images	Notes
Calibration	Severgni ni	MODS	slit flat 0.8 dualgrating		Mods[1-2][b/r].20220705.0003-0008	

Calibration	Severgnini	MODS	slitless dualgrating	Mods[1-2][b/r].20220705.0009 - mods[1-2]b.20220705.0018, mods[1-2]r.20220705.0013
Calibration	Severgnini	MODS	arc dualgrating	mods[1-2]b.20220705.0019-0021, mods[1-2]r.20220705.0014-0016
Calibration	Giannini	MODS	slit flat 0.8 dualgrating	mods[1-2]b.20220705.0022-0027, mods[1-2]r.20220705.0017-0022
Calibration	Giannini	MODS	slit flat 0.8 dualgrating	mods[1-2]b.20220705.0028-0037, mods[1-2]r.20220705.0023-0027
Calibration	Giannini	MODS	arcs_dual	mods[1-2]b.20220705.0038-0040, mods[1-2]r.20220705.0028-0030

Detailed log by Andrew Cardwell at this link:

<https://drive.google.com/drive/u/2/folders/1oS6irJ2i-GJnK-YpFLB7LWZPsm4tEf3t>

## Notes

### INAF queue observing, 2022 July 05 - July 06

Observer: A. Cardwell

Telescope Operator: Josh Williams

Astronomers from Italy: Simona Paiano, Ester Marini

Instrument: LBC, PEPSI

## Summary

Due to the Covid-19 pandemic situation these observations have been performed by LBTO personnel

through the indications of LBT Italian observers (S. Paiano and E. Marini) connected from Italy.

At the sunset the sky seemed clear and the humidity was below the limit, but soon the sky became covered.

Night duration (12 degree - twilight) 03:35 - 11:15 UT = **7 h 50 m**

Observing time: 6h 20min (81%)\*

Weather time loss: 1h 25min (18%)\*

Technical time loss: 0h 5min (1%)\*

## Data Summary

Project_RUN	Objects	Instrument	Configuration	ExpTime/Time_tot	Images	Notes
Calibration	Flats	LBC-Bino	U-,V-spec, g, i			PA=0,180, for Giunta, Rossi
Rainer	HAT-P-37	PEPSI	CD1-4/300		20+30min each side	S/N~45(blue), ~100(red) first, then ~31(blue), ~175(red) with a second exp of 30 min
Rainer	HAT-P-37	PEPSI	CD2-5/300		20min each side	S/N~60 in the blue ~145 in the red
Rainer	HAT-P-37	PEPSI	CD3-6/300		30min each side	S/N~105 in the blue ~190 in the red, we added 10 minutes to the exp time to reach good S/N
Bellazzini	<b>GaiaEDR3</b> 2659693686716034176	PEPSI	CD3-6/300	15min each side		S/N~110 in the red and ~60 in the blue
Bellazzini	<b>GaiaEDR3</b> 264267523528641952	PEPSI	CD3-6/300	15min each side		S/N~85 in the red and ~75 in the blue
Bellazzini	<b>GaiaEDR3</b> 2448812029433640704	PEPSI	CD3-6/300	15min each side		S/N~80 in the red and ~50 in the blue
Clementini	<b>GaiaEDR3</b> 1982512068675148032	PEPSI	CD2-4/300	15min each side		S/N~112 in the red and ~36 in the blue (blue slightly below the requirement)
Giunta	twilight field	LBC-Bino		0.18+0.18h		2005TG45_20220706UT.xml (done twice + 6more images before the next target reached 30deg)

Giunta	twilight field	LBC-Bi no	0.12+ 0.12h	2020SB_2022070 6.xml
Calibrati on	Flats	LBC-Bi no	r-sloan,z- sloan	PA=0,180

Detailed log by Andrew Cardwell at this link:

<https://drive.google.com/file/d/1CakFv-kFIh7JPGujr7oVw6nbzyySX6j/view?usp=sharing>

## Notes

### INAF queue observing, 2022 July 06 - July 07

Observer: A. Cardwell

Telescope Operator: Josh Williams

Astronomers from Italy: Ester Marini, Simona Paiano

Instrument: MODS

## Summary

Due to the Covid-19 pandemic situation these observations have been performed by LBTO personel

through the indications of LBT Italian observers (E. Marini, S.Paiano, Andrea Rossi ) connected from Italy.

At sunset the sky is clear and the humidity is below the limit.

We plan to do a MODS night, in order to start and finish **MiravalZanon** 's program.

Night duration (12 degree - twilight) 03:35 - 11:15 UT = **7 h 50 m**

Observing time: 7h 22min (94%)\*

Weather time loss: 0h 00min (0%)\*

Technical time loss: 0h 28min (6%)\*

## Data Summary

Project_ RUN	Objects	Instrum ent	Configuration	ExpTi me /Time_ tot	Images	Notes
STD	BD+3326 42	MODS- LS	Dual Grating		mods1-2b.202 20707.0003-0 005.fits; mods1-2r.202 20707.0006-0 008	for <b>MiravalZano</b> <b>n</b>

MiravalZanon	J1816	MODS-LS	Dual Grating	mods1-2b.2020707.000-000.fits; mods1-2r.2020707.000-000	seeing~0.7-0.8" on the first six exposures, third hour: seeing stable ~0.6", fourth hour: seeing ~0.8", fifth hour = 0.9", sixth hour= we did first two exposures, the last one should be evaluated because taken after the 12-twelve twilight , last 30 mins: missing
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Calibration	MiravalZanon	MODS	arc_dualgrating,	mods[1-2]b.20220707.0025-0027, mods[1-2]r.20220712.0037-0039
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Calibration	MiravalZanon	MODS	slit_flat_1.0_dualgrating,	mods[1-2]b.20220707.0028-0033, mods[1-2]r.20220712.0040-0045
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Calibration	MiravalZanon	MODS	slitless_flat_dualgrating,	mods[1-2]b.20220707.0034-0043, mods[1-2]r.20220712.0046-0050.
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Calibration	MiravalZ anon	MODS	slit_flat_5.0_dualg rating,	mods[1-2]b.20 220707.0044- 0049, mods[1-2]r.20 220712.0051- 0053
Calibration	MiravalZ anon	MODS	Bias 8kx3k,	mods[1-2]b.20 220707.0050- 0054, mods[1-2]r.20 220712.0054- 0058.

Detailed log by Andrew Cardwell at this link:

<https://drive.google.com/file/d/13b5YzCYdReXJL0pJP3jAzY3A3CGMUaE7/view?usp=sharing>

## Notes

### INAF queue observing, 2022 July 07 - July 08

Observer: A. Cardwell

Telescope Operator: Josh Williams

Astronomers from Italy: Simona Paiano, Ester Marini

Instrument: LBC and LUCI

## Summary

Due to the Covid-19 pandemic situation these observations have been performed by LBTO personel

through the indications of LBT Italian observers (S.Paiano, E. Marini and Andrea Rossi ) connected from Italy.

At sunset the sky seems clear. The forecast says mostly clear, but some clouds are visible from the all sky camera in the East part of the sky.

Night duration (12 degree - twilight) 03:35 - 11:15 UT = **7 h 50 m**

Observing time: 5h 40min (72.3%)\*

Weather time loss: 2h 00min (25.5%)\*

Technical time loss: 0h 10min (2.2%)\*

## Data Summary

Project_ RUN	Object s	Instru ment	Configu ration	ExpTime /Time_tot	Images	Notes
Giunta	2020H A10	LBC	g + i			Seeing~1.0" , field observed two times
Rossi	AT2022 cmc	LBC	ugriz	0.35h+0.3 h		Seeing~1.0"

Giunta	KN_A - KN_B	LBC	g + i	0.46h+0.4 6h	Seeing~1.2"
Giunta	AO_K - AO_L	LBC	g + i	0.27h+0.2 7h	Seeing~ 1.2"
CALIB	Mannu cci	MODS 1-2	slitless-du al		Mods[1-2]b.202 20708.0009-001 8, mods1r.2022070 8.0010-0014, mods2r.2022070 8.0009-0013
CALIB	Mannu cci	MODS 1-2	arcs-dual		mods[1-2]b.202 20708.0019-002 1, mods[1-2]r.2022 0708.0014-0017
Giunta	twilight field	LBC-Bi no	griz	0.083h+0. 083h	2013TQ5, lbc.20220708.10 3806.fits and lbc.20220708.10 3816.fits are bad images
Giunta	twilight field	LBC-Bi no	griz	0.23h+0.2 3h	2020SB, done twice. Satellite trail in lbc.20220708.10 5110, lbc.20220708.10 5123, lbc.20220708.10 5659 and lbc.20220708.10 5708

Detailed log by Andrew Cardwell at this link:

[https://drive.google.com/file/d/1mOdYR1k90cj5QZ0mLSBvIC08xZ\\_M6vIQ/view?usp=sharing](https://drive.google.com/file/d/1mOdYR1k90cj5QZ0mLSBvIC08xZ_M6vIQ/view?usp=sharing)

-- [Andrea Rossi](#) - 10 Jul 2022

## INAF queue observing, 2022 July 09 - July 10

Observer: A. Cardwell

Telescope Operator: Josh Williams

Astronomers from Italy: Andrea Rossi and Felice Cusano

Instrument: PEPSI

## Summary

Due to the Covid-19 pandemic situation these observations have been performed by LBTO personel through the indications of LBT Italian observers ( A. Rossi, F. Cusano, E. Marini and S. Paiano) connected from Italy.

At sunset the sky is cloudy, we stay closed.

Night duration (12 degree - twilight) 03:35 - 11:15 UT = **7 h 50 m**

Observing time: 0h 0min (0%)\*

Weather time loss: 7h 50min (100%)\*

Technical time loss: 0h 0min (0%)\*

## Data Summary

Project_RUN	Objects	Instrument	Configuration	ExpTime /Time_tot	Images	Notes
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Detailed log by Andrew Cardwell at this link:

<https://drive.google.com/file/d/132x-7cHB7m7vwi7qiA1tDd23klmOIMAC/view?usp=sharing>

-- EsterMarini - 10 Jul 2022

## INAF queue observing, 2022 July 10 - July 11

Observer: A. Cardwell

Telescope Operator: Josh Williams

Astronomers from Italy: Ester Marini and Felice Cusano

Instrument: PEPSI

## Summary

Due to the Covid-19 pandemic situation these observations have been performed by LBTO personel

through the indications of LBT Italian observers (S.Paiano, A. Rossi, Felice Cusano and E. Marini) connected from Italy.

At sunset the sky is cloudy and we cannot open.

Night duration (12 degree - twilight) 03:35 - 11:15 UT = **7 h 50 m**

Observing time: 1h 3min (13.4%)\*

Weather time loss: 6h 17min (80.2%)\*

Technical time loss: 0h 30min (6.4%)\*

## Data Summary

Project_RU N	Objects	Instrument	Configuration	ExpTime e /Time_t ot	Image s	Note s
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Bellazzini	Gaia EDR3 12503491998801446 40	PEPSI	CD3-6/300	to redo
Rainer	Kepler-6	PEPSI	CD2-5/300	to redo

Detailed log by Andrew Cardwell at this link:

[https://drive.google.com/file/d/1W8WmNyP4JGHWUndK6K35aCII1ztZUik\\_/view?usp=sharing](https://drive.google.com/file/d/1W8WmNyP4JGHWUndK6K35aCII1ztZUik_/view?usp=sharing)

## INAF queue observing, 2022 July 11 - July 12

Observer: A. Cardwell

Telescope Operator: Josh Williams

Astronomers from Italy: Ester Marini and Felice Cusano

Instrument: PEPSI

### Summary

Due to the Covid-19 pandemic situation these observations have been performed by LBTO personel

through the indications of LBT Italian observers (S.Paiano, A. Rossi, Felice Cusano and E. Marini) connected from Italy.

At sunset the sky is cloudy and we cannot open.

Night duration (12 degree - twilight) 03:35 - 11:15 UT = **7 h 50 m**

Observing time: 0h 0min (%)\*

Weather time loss: 0h 0min (%)\*

Technical time loss: 0h 0min (%)\*

### Data Summary

Project_RUN	Objects	Instrument	Configuration	ExpTime /Time_tot	Images	Notes
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Detailed log by Andrew Cardwell at this link:

## INAF queue observing, 2022 Sept 11 - Sept 12

Observer: A. Cardwell

Telescope Operator: Josh Williams

Astronomers from Italy: Felice Cusano, Ester Marini, Simona Paiano

Instrument: PEPSI

## Summary

Due to the Covid-19 pandemic situation these observations have been performed by LBTO personnel

through the indications of LBT Italian observers connected from Italy.

At the sunset the sky is clear, but from the satellite we can see that clouds will soon roll in. 01:32

The LBTO team is working to fix a problem with AGW4 of the PEPSI-POL DX side not responding.

02:34 still working to fix the problem, nevertheless the sky is covered by clouds.

Night duration (12 degree - twilight) 02:30 - 12:10 UT = **9 h 40 m**

Observing time: 0 h 00 min (0 %)\*

Weather time loss: 9 h 40 min (100%)\*

Technical time loss: 0 h 00 min (0 %)\*

## Data Summary

Project_RUN	Objects	Instrument	Configuration	ExpTime /Time_tot	Images	Notes
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Detailed log by Andrew Cardwell at this link:

<https://drive.google.com/file/d/1y8LZUqd4Kc5egJgndpcpob2dD-nMO29V/view?usp=sharing>

## INAF queue observing, 2022 Sept 18 - Sept 19

Observer: A. Cardwell

Telescope Operator: Steve Allanson

Astronomers from Italy: Felice Cusano, Andrea Rossi

Instrument: PEPSI

## Summary

Due to the Covid-19 pandemic situation these observations have been performed by LBTO personnel

through the indications of LBT Italian observers connected from Italy.

At the sunset the sky is clear, we start with PEPSI. Problem with the dichroic, CDR moves OK while CDB is fixed to CD3 all the night.

Night duration (12 degree - twilight) 02:30 - 12:10 UT = **9 h 40 m**

Observing time: 8 h 20 min (86%)\*

Weather time loss: 1h 20min (14%)\*

Technical time loss: 0 h 00 min (0%)\*

## Data Summary

Project_RU N	Objects	Instrume nt	Configurati on	ExpTim e /Time_t ot	Image s	Notes
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Marini	EM*GGR 44	PEPSI-BI NO	PFU-CD3/6	1.06h	S/N~26 0 on red
Bellazzini	Gaia DR3 4566011038396861 440	PEPSI-BI NO	PFU-CD3/6	0.66h	S/N~10 2 on red
Bellazzini	Gaia DR3 4532592619428218 624	PEPSI-BI NO	PFU-CD3/6	0.72h	S/N~11 7 on red
Bellazzini	Gaia DR3 2252739178870417 920	PEPSI-BI NO	PFU-CD3/6	0.72h	S/N~10 0 on red
Bellazzini	Gaia DR3 4247325598914437 888	PEPSI-BI NO	PFU-CD3/6	0.72h	S/N~11 9 on red
Marini	GSC 04501-00166	PEPSI-BI NO	PFU-CD3/6	0.5h	S/N~20 8 on red
Bellazzini	Gaia DR3 2666801509697590 784	PEPSI-BI NO	PFU-CD3/6	0.6h	S/N~11 0 on red; time increase d for clouds
Gangi	RY Tau	PEPSI-P OLA	POL-CD3/5	2.8h	DIMM 1.1-1.3; S/N~49 0-570 on red
Gangi	GM Aur	PEPSI-P OLA	POL-CD3/5	3.1h	S/N~18 0 on red
Gangi	DG Tau	PEPSI-P OLA	POL-CD3/5	2.8h	S/N~17 0 on red

Detailed log by Andrew Cardwell at this link:

[https://drive.google.com/file/d/131ZQoyA\\_shUJoDWkMyADOfUA1cA52dF/view?usp=sharing](https://drive.google.com/file/d/131ZQoyA_shUJoDWkMyADOfUA1cA52dF/view?usp=sharing)

## Notes

### INAF queue observing, 2022 Sept 19 - Sept 20

Observer: A. Cardwell

Telescope Operator: Steve Allanson

Astronomers from Italy: Andrea Rossi, Simona Paiano and Ester Marini

Instrument: PEPSI

## Summary

Due to the Covid-19 pandemic situation these observations have been performed by LBTO personnel

through the indications of LBT Italian observers connected from Italy.

At the sunset the sky is cloudy, we are closed. The plan is to start with PEPSI. Problem with the dichroic, CDR moves OK while CDB is fixed to CD3 all the night.

Humidity ~100% all night long. We did not open.

Night duration (12 degree - twilight) 02:30 - 12:10 UT = **9 h 40 m**

Observing time: 0 h 00 min (0%)\*

Weather time loss: 9 h 40 min (100%)\*

Technical time loss: 0 h 00 min (0%)\*

## Data Summary

Project_RUN	Objects	Instrument	Configuration	ExpTime /Time_tot	Images	Notes
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Detailed log by Andrew Cardwell at this link:

[https://drive.google.com/file/d/1DDYMEZs7tK\\_Eg5OL6qt5M0krFQqyyGJR/view?usp=sharing](https://drive.google.com/file/d/1DDYMEZs7tK_Eg5OL6qt5M0krFQqyyGJR/view?usp=sharing)

## INAF queue observing, 2022 Sept 22 - Sept 23

Observer: Olga Kuhn

Telescope Operator: David Gonzalez Huerta

Astronomers from Italy: Ester Marini and Felice Cusano

Instrument: PEPSI

## Summary

Due to the Covid-19 pandemic situation these observations have been performed by LBTO personnel

through the indications of LBT Italian observers connected from Italy.

At the sunset the sky is cloudy, we are closed. The plan is to use PEPSI tonight. We still have the problem with the dichroic, CDR moves OK while CDB is fixed to CD3 all the night.

We open at 10:20 UT, observing with PEPSI

Night duration (12 degree - twilight) 02:09 - 12:15 UT = **10 h 06 m**

Observing time: 1 h 36 min (16%)\*

Weather time loss: 8 h 00 min (79%)\*

Technical time loss: 0 h 30 min (5%)\*

## Data Summary

Project_R UN	Objects	Instrume nt	Configurati on	ExpTim e /Time_t ot	Image s	Notes
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Bellazzini	Gaia DR3 3397200590039337 472	PEPSI-P FU	CD3-6	0.67	loosing guiding on left side after 16 min, done x 2, S/N~30 in blue, ~90 in red
Bellazzini	Gaia DR3 2563157081193000 576	PEPSI-P FU	CD3-6	0.5	S/N(blue)~ 62 , S/N(red)~ 122

Detailed log by Olga Kuhn at this link:

<https://drive.google.com/file/d/1ea6urV0VwrEOzhkMbebdgqlqU1jXF3Q/view?usp=sharing>

## INAF queue observing, 2022 Sept 23 - Sept 24

Observer: Olga Kuhn

Telescope Operator: David Gonzalez Huerta

Astronomers from Italy: Simona Paiano and Felice Cusano

Instrument: PEPSI

## Summary

Due to the Covid-19 pandemic situation these observations have been performed by LBTO personel

through the indications of LBT Italian observers connected from Italy.

At the sunset the sky is cloudy and the humidity is over 90%, we are closed.

The plan is to use PEPSI tonight.

Night duration (12 degree - twilight) 02:09 - 12:15 UT = **10 h 06 m**

Observing time: 3 h 30 min (36%)\*

Weather time loss: 5 h 40 min (56%)\*

Technical time loss: 0 h 50 min (8%)\*

## Data Summary

Project_R UN	Objects	Instrume nt	Configurati on	ExpTim e /Time_t ot	Image s	Notes
Bellazzini	Gaia DR3 3701321769671742 72	PEPSI-P FU	CD3-CD6	0.9h		done in 2 exps for problems with GCS
Bellazzini	Gaia DR3 3132546122606711 04	PEPSI-P FU	CD3-CD6	0.83h		S/N~128, 77

Bellazzini	Gaia DR3 2565307863375846 912	PEPSI-P FU	CD3-CD6	0.67h	S/N~135, 77
Bellazzini	Gaia DR3 3378594147487066 88	PEPSI-P FU	CD3-CD6	0.83h	S/N~123, 73
Bellazzini	Gaia DR3 5181229713016209 920	PEPSI-P FU	CD3-CD6	0.67h	S/N 128,83
Bellazzini	Gaia DR3 3131826522307934 464	PEPSI-P FU	CD3-CD6	0.83h	S/N 123, 76
Bellazzini	Gaia DR3 5564331523004856 32	PEPSI-P FU	CD3-CD6	h	S/N

Detailed log by Olga Kuhn at this link:

[https://drive.google.com/file/d/18FNruOJFVsQ9d0KI9Nlr\\_IrsskewwMM/view?usp=sharing](https://drive.google.com/file/d/18FNruOJFVsQ9d0KI9Nlr_IrsskewwMM/view?usp=sharing)

## INAF queue observing, 2022 Oct 16 - Oct 17

Observer: Alexander Becker

Telescope Operator: David Gonzalez Huerta

Astronomers from Italy: Ester Marini and Felice Cusano

Instrument: MODS

### Summary

Due to the Covid-19 pandemic situation these observations have been performed by LBTO personel

through the indications of LBT Italian observers connected from Italy.

At sunset the sky is clear, but humidity is ~100%. We stay closed. We open at 04:56UT

closing at 10:18 for high humidity 99%.

Night duration (12 degree - twilight) 01:50 - 12:20 UT = \* 10h\* \* 30m\*

Observing time: 5 h 10 min (49%)\*

Weather time loss: 4 h 30 min (43%)\*

Technical time loss: 0 h 50 min (8%)\*

## Data Summary

Project_RUN	Objects	Instrument	Configuration	ExpTime /Time_tot	Images	Notes
CALIB	Severgnini	MODS1-2	Bias 1kx1k			
CALIB	Severgnini	MODS1-2	Bias 8kx3k			
CALIB	La Forgia	MODS1-2	Bias 4kx3k			
CALIB	Giannini	MODS1-2	Bias 3kx3k			
CALIB	Severgnini	MODS1-2	Arcs dual grating			
CALIB	Grazian	MODS1-2	flat dual grating 0.6"			
CALIB	Decarli	MODS1-2	arcs red grating			
CALIB	Decarli	MODS1-2	slitlessflat red grating			
CALIB	La Forgia	MODS1-2	flat dualgrating 1.2"			

CALIB	La Forgia	MODS1-2	slitless flat dual grating		
CALIB	Pentericci	MODS1-2	slitless flat blue grating		
STD	Feige110	MODS1-2	blue grating		for Pentericci
Pentericci	USD2	MODS1-2	MOS-blue grating	4h (3h in the spec)	first exposure with variable high seeing, MODS2 problem in collimating first 3 exposures, 2 X UDS2sci-1 .txt
La Forgia	Didymos	MODS1-2	dual grating	0.33h	two exps done, then close for humidity

Detailed log by Alexander Becker at this link:

<https://drive.google.com/file/d/1gEamc6bz9QssvnH5lzcKoB2hKy8bnW4t/view?usp=sharing>

## INAF queue observing, 2022 Oct 17 - Oct 18

Observer: Alexander Becker

Telescope Operator: David Gonzalez Huerta

Astronomers from Italy: Andrea Rossi and Simona Paiano

Instrument: MODS

## Summary

Due to the Covid-19 pandemic situation these observations have been performed by LBTO personnel

through the indications of LBT Italian observers connected from Italy.

At sunset the sky is clear, and humidity is ~80%. We open at 00:55 UT.

Night duration (12 degree - twilight) 01:50 - 12:20 UT = \* 10h\* \* 30m\*

Observing time: 0 h 00 min (0%)\*

Weather time loss: 0 h 00 min (0%)\*

Technical time loss: 0 h 00 min (0%)\*

## Data Summary

Project_R UN	Objects	Instrument	Configuration	ExpTime /Time_tot	Images	Notes
CALIB	FLAT	MODS1-2	dual, slitless			for Severgnini
STD	Feige110	MODS1-2	dualgrating			
Rossi DDT	GRB221009A	MODS1-2	dualgrating, slit 1.2"	1.5hr		
Rossi DDT	GRB221009A	MODS1-2	dualgrating, gri imaging	0.4hr		

STD	Feige110	MODS1-2	dualgrating			
Severgnini	NGC7468	MODS1-2	dualgrating, slit 1.2"	0.33hr		is DeltaX =1" ok?
Severgnini	Mrk1134	MODS1-2	dualgrating, slit 1.2"	0.16hr		first PA
Severgnini	Mrk1134	MODS1-2	dualgrating, slit 1.2"	0.16hr		second PA
Severgnini	Mrk1134	MODS1-2	dualgrating, slit 1.2"	0.16hr		third PA
Pentericci	UDS2	MODS1-2	bluegrating, MOS ID593032	4h	mods1b.0036-0041 / mods2b.0035-0040	
Grazian_16	Q1180142	MODS1-2	dualgrating, slit 1.2"		mods1b.0041 mods1r.0053 / mods2b.0041 mods2r.0051	seeing~1.2"
Grazian_16	Q1176698	MODS1-2	dualgrating, slit 1.2"		mods1b.0043 mods1r.0057 / mods2b.0042 mods2r.0054	seeing~1.2"

Grazian_16	Q1198592	MODS1-2	dualgrating, slit 1.2"	mods1b.0044 mods1r.0062 / mods2b.0043 mods2r.0059	seeing~1.0"
La_Forgia	Didymos	MODS1-2	dualgrating, slit 1.2"	mods1b.0045-0050 mods1r.0068-0073 / mods2b.0044-49 mods2r.0065-0070	seeing~1.5"
La_Forgia	HD292561 solar analog	MODS1-2	dualgrating, slit 1.2"	mods1b.0046-00 mods1r.00-00 / mods2b.45- mods2r.00-00	seeing~"
La_Forgia	Didymos	MODS1-2	dualgrating, slit 1.2"	mods1b.00-00 mods1r.00-00 / mods2b.00- mods2r.00-00	seeing<1"

Detailed log by Alexander Becker at this link:

[https://drive.google.com/file/d/1ydvj\\_w7vZMXtXxs52X0ZnuTE-88ZFj3S/view?usp=sharing](https://drive.google.com/file/d/1ydvj_w7vZMXtXxs52X0ZnuTE-88ZFj3S/view?usp=sharing)

## INAF queue observing, 2022 Oct 18 - Oct 19

Observer: Alexander Becker

Telescope Operator: Josh Williams

Astronomers from Italy: Ester Marini and Felice Cusano

Instrument: MODS

## Summary

Due to the Covid-19 pandemic situation these observations have been performed by LBTO personnel

through the indications of LBT Italian observers connected from Italy.

At sunset the sky is clear, but humidity and wind are over the limit (~95% and ~18m/s with gusts up to 21.5m/s, respectively). We stay closed.

Night duration (12 degree - twilight) 02:09 - 12:15 UT = \* 10h\* \* 06m\*

Observing time: 0 h 00 min (0%)\*

Weather time loss: 10 h 06 min (100%)\*

Technical time loss: 0 h 00 min (0%)\*

## Data Summary

Project_RUN	Objects	Instrument	Configuration	ExpTime /Time_tot	Images	Notes
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Detailed log by Alexander Becker at this link:

[https://drive.google.com/file/d/1SlcXghrwghw1M6eLs8UJXZ0n83oioKI/\\_view?usp=sharing](https://drive.google.com/file/d/1SlcXghrwghw1M6eLs8UJXZ0n83oioKI/_view?usp=sharing)

## INAF queue observing, 2022 Oct 19 - Oct 20

Observer: Alexander Becker

Telescope Operator: Josh Williams

Astronomers from Italy: Andrea Rossi and Felice Cusano

Instrument: MODS

## Summary

Due to the Covid-19 pandemic situation these observations have been performed by LBTO personel

through the indications of LBT Italian observers connected from Italy.

At sunset the sky has passing cirrus. We open at 00:55.

Night duration (12 degree - twilight) 01:50 - 12:20 UT = \* 10h\* \* 30m\*

Observing time: 9 h 26 min (93.4%)\*

Weather time loss: 0 h 00 min (0%)\*

Technical time loss: 0 h 40 min (6.6%)\*

## Data Summary

Project_RUN	Objects	Instrument	Configuration	Exp Time/Time_to_t	Images	Notes
STD	Feige10	MOD S1-2	red grating		mods1r.0005-0007 , mods2r.0006-0008	for De Carli
STD	Feige10	MOD S1-2	dual grating		mods1b.0003-005 ,mods1r.0008-0010 , mods2b.0003-005 ,mods2r.0009-0011	cirrus, maybe useless
Rossi	GRB221009A	MOD S1-2	dual, gri	0.5hr	mods1b.0006-0013 ,mods1r.0011-0018 , mods2b.0006-0013 ,mods2r.0012-0019	seeing~1.2"

DeCarli	PSO33 1.93	MOD S1-2	red, 1.2slit	0.33 hr	mods1r.0023-0025 , mods2r.0023-0025	seeing~ 1.3",+1 exposur e per arm
Grazia n_16	Q1146 176	MOD S1-2	dual, 1.2slit	0.20 hr	mods1b.0014 ,mods1r.0030 , mods2b.0014 ,mods2r.0030	
Grazia n_16	Q1146 202	MOD S1-2	dual, 1.2slit	0.22 hr	mods1b.0015 ,mods1r.0034 , mods2b.0015 ,mods2r.0034	
DeCarli	PSO33 3.07	MOD S1-2	red, 1.2slit	0.33 hr	mods1r.0038-0039 , mods2r.0039-0040	seeing ~1.1"
DeCarli	PSO34 5.09	MOD S1-2	red, 1.2slit	0.5hr	mods1r.0044-0046 , mods2r.0045-0047	seeing ~1.2"
Pentteri cci	UDS2	MOD S1-2	bluegrat ing, MOS ID5930 32	2h	mods1b.00 ,mods1r.00 , mods2b.00 ,mods2r.00	clouds during last exposur e, to be done again
STD	Feige1 10	MOD S1-2	blue grating		mods1b.00-00 , mods2b.00-00	for Pentteric ci
Telluric	HIP800 7	LUCI 1-2	G200-H Kspec			for Bisogni
Bisogni	W1	LUCI 1-2	G200-H Kspec	1.5h		seeing ~1"

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La Didym LUCI h  
Forgia os 1-2

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Detailed log by Alexander Becker at this link:

[https://drive.google.com/file/d/1cfa8PeWPj4MhFVGMF87nISSy2Fi\\_BST9/view?usp=share](https://drive.google.com/file/d/1cfa8PeWPj4MhFVGMF87nISSy2Fi_BST9/view?usp=share)

## INAF queue observing, 2022 Oct 20 - Oct 21

Observer: Alexander Becker

Telescope Operator: Josh Williams

Astronomers from Italy: Ester Marini and Simona Paiano

Instrument: PEPSI - MODS

### Summary

Due to the Covid-19 pandemic situation these observations have been performed by LBTO personel

through the indications of LBT Italian observers connected from Italy.

At sunset the sky is clear, Temp 5.2C, Humidity 74%, Wind ~6.5m/s@200, we open.

Night duration (12 degree - twilight) 01:50 - 12:20 UT = \* 10h\* \* 30m\*

Observing time: 9 h 43 min (96%)\*

Weather time loss: 0 h 00 min (0%)\*

Technical time loss: 0 h 23 min (4%)\*

### Data Summary

Project_R UN	Objects	Instrum ent	Configura tion	ExpTi me /Time_ tot	Images	Notes
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Bellazzini	GAIA DR3 44697521282831 77728	PEPSI- PFU	CD3-6	0.67hr	S/N~150 in the red, ~105 in the blue
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Bellazzini	GAIA DR3 20911174635805 83808	PEPSI- PFU	CD3-6	0.83hr	S/N~150 in the red, ~105 in the blue
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Bellazzini	GAIA RD3 42097251487970 54592	PEPSI- PFU	CD3-6	0.67hr	S/N~140 on the red, ~115 on the blue
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Bellazzini	GAIA RD3 42455224685540 91904	PEPSI- PFU	CD3-6	1hr	S/N~130 in the red, ~90 in the blue, we have been off target for 8 minutes, we took 8 minutes more
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Bellazzini	GAIA RD3 18792250115116 31232	PEPSI- PFU	CD3-6	0.83hr	S/N~130 on the red, ~115 on the blue
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Bellazzini	GAIA RD3 26269716709171 98080	PEPSI- PFU	CD3-6	0.67hr		S/N~150 on the red, ~110 on the blue
Bellazzini	GAIA RD3 26527805760754 20544	PEPSI- PFU	CD3-6	0.67hr		S/N~150 on the red, ~120 on the blue
STD	Feige110	MODS	blue grating		mods1-2b.202 21021.0005-0 007.fits	for Pentericc i
Pentericci	UDS2	MODS- MOS	blue grating	2h + 2h	mods1-2b.202 21021.0011-0 016.fits	UDS2-4 done, seeing~0 .6" at the beginnin g, USD2-5 done, see~0.5" , stable during the obs.
Pentericci	UDS1	MODS- MOS	blue grating	2h + 2h	mods1-2b.202 21021.0020-0 025.fits	UDS1-1 done , seeing~0 .6", UDS1-2 seeing~0 .7" , last exposure some issues with the guiding,

						probably to reject!!
Severgnin i	Mrk365	MODS-L S	dual grating	0.16h + 0.16h	mods1-2b.202 21021.0026-0 027.fits , mods1-2r.202 21021.0006-0 007.fits	seeing~0 .8
Severgnin i	MCG-06	MODS-L S	dual grating	0.16h + 0.16h	mods1-2b.202 21021.0028-0 029.fits , mods1-2r.202 21021.0011-0 012.fits	seeing~0 .9
Severgnin i	GD71 Std star	MODS-L S	dual grating		mods1-2b.202 21021.0030-0 032.fits , mods1-2r.202 21021.0015-0 017.fits	
De Carli	GD71 Std star	MODS-L S	red grating		mods1-2r.202 21021.0018-0 020.fits	

Detailed log by Alexander Becker at this link:

[https://drive.google.com/file/d/1oeLm5\\_bMtb5rKmCHIVpuX8yy0LY-sQzI/view?usp=sharing](https://drive.google.com/file/d/1oeLm5_bMtb5rKmCHIVpuX8yy0LY-sQzI/view?usp=sharing)

## INAF queue observing, 2022 Nov 08 - Nov 09

Observer: Andrew Cardwell

Telescope Operator: Josh Williams

Astronomers from Italy: Felice Cusano and Andrea Rossi

Instrument: LUCI

## Summary

Due to the Covid-19 pandemic situation these observations have been performed by LBTO personnel

through the indications of LBT Italian observers connected from Italy.

At sunset the sky is clear, we open. Starting at 00:55 OSCO. We close at 05:14 because of strong wind gusts. We give up the night at 12 UT.

Night duration (12 degree - twilight) 01:20 - 12:50 UT = \* 11h \* 30m\*

Observing time: 2h 10min (19%)\*

Weather time loss: 8h 10min (71%)\*

Technical time loss: 1h 10min (10%)\*

## Data Summary

Project_RUN	Objects	Instrument	Configuration	ExpTime/Time_to t	Images	Notes
Grazian_19	SDSSJ2342	LUCI1-2	G210-K	1.1h/1h		
Grazian_19	SDSSJ2342	LUCI1-2	G210-H	0.8h/1h		observations stopped for high wind
Telluric	HIP115618	LUCI1-2	G210-K			

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Telluric

HIP7202

LUCI1-2

G210-H

different  
telluric for  
high wind  
during K  
band obs

Detailed log by Andrew at this link:

[https://drive.google.com/file/d/1RGI23wGPZida4Ujmm60mlwomwSwSB-Wf/view?usp=share\\_link](https://drive.google.com/file/d/1RGI23wGPZida4Ujmm60mlwomwSwSB-Wf/view?usp=share_link)

-- [EsterMarini](#) - 09 Nov 2022

## INAF queue observing, 2022 Nov 09 - Nov 10

Observer: Andrew Cardwell

Telescope Operator: Josh Williams

Astronomers from Italy: Ester Marini and Felice Cusano

Instrument:

### Summary

Due to the Covid-19 pandemic situation these observations have been performed by LBTO personel

through the indications of LBT Italian observers connected from Italy.

At sunset the wind is ~28m/s, we stay closed.

Night duration (12 degree - twilight) 01:20 - 12:50 UT = \* 11h \* 30m\*

Observing time: 0h 0min (0%)\*

Weather time loss: 11h 30min (100%)\*

Technical time loss: 0h 00min (00%)\*

### Data Summary

Project_RUN	Objects	Instrument	Configuration	ExpTime /Time_tot	Images	Notes
Calibration						see log

Detailed log by Andrew at this link:

[https://drive.google.com/file/d/1UcD9kf\\_P4KfrEwsMO60eJlz7No\\_HwRgv/view?usp=sharing](https://drive.google.com/file/d/1UcD9kf_P4KfrEwsMO60eJlz7No_HwRgv/view?usp=sharing)

-- [AndreaRossi](#) - 11 Nov 2022

## INAF queue observing, 2022 Nov 10 - Nov 11

Observer: Andrew Cardwell

Telescope Operator: Josh Williams

Astronomers from Italy: Andrea Rossi and Simona Paiano

Instrument: LUCI

### Summary

Due to the Covid-19 pandemic situation these observations have been performed by LBTO personel

through the indications of LBT Italian observers connected from Italy.

At sunset humidity is 80% dropping from 100%. We open at 55% at 00:45 and sky is clear.

Night duration (12 degree - twilight) 01:20 - 12:50 UT = \* 11h\* \* 30m\*

Observing time: 09 h 30 min (83%)\*

Weather time loss: 00 h 00 min (0%)\*

Technical time loss: 02 h 00 min (17%)\*

### Data Summary

Project_R UN	Objects	Instrument	Configuration	ExpTime/Time_tot	Images	Notes
Calibration						see log
Caratti DDT	Mol 77	LUCI1	AO ima: Ks,H2,J	0.1h+0.5h+ 0.1h		We stop at 10images of J band, H band TBD
STD	GSPC P576-F	LUCI1				for Caratti
Rossi DDT	GRB 221009A	LUCI1+2	H+K imaging	0.1 hr		
STD	HIP952	LUCI1+2	K G210			for Grazian 19
Grazian 19	SDSSJ0029	LUCI1+2	K G210	3/2.5h		30min more for jumping seeing
STD	HIP952	LUCI1+2	H G210			for Grazian 19
Grazian 19	SDSSJ0029	LUCI1+2	H G210	1h+1h	luci1.2022111.[0152-0163] , luci2.20221	seeing~0.8-0.9"

111.[0092-0  
193]

Telluric HIP13917 LUCI1+2 K G210 for Tozzi  
Tozzi

Telluric HIP39929 LUCI1+2 K G210  
Grazian

Grazian\_1 SDSSJ0918+ LUCI1+2 K G210 2.5+2.5 luci1.20221 seeing ~  
9 5104 218] , 1",  
luci2.20221 (0.5+0.5  
111.[0129-0 hrs after  
158] morning  
twilight)

Detailed log by Andrew at this link:

[https://drive.google.com/file/d/1a3NnSKwrTcHhpWb1yO6esGz-wEI7hm-C/view?usp=share\\_link](https://drive.google.com/file/d/1a3NnSKwrTcHhpWb1yO6esGz-wEI7hm-C/view?usp=share_link)

-- EsterMarini - 11 Nov 2022

## INAF queue observing, 2022 Nov 11 - Nov 12

Observer: Andrew Cardwell

Telescope Operator: Josh Williams

Astronomers from Italy: Ester Marini and Felice Cusano

Instrument: LUCI and PEPSI

### Summary

Due to the Covid-19 pandemic situation these observations have been performed by LBTO personnel

through the indications of LBT Italian observers connected from Italy.

At sunset the sky is partly cloudy and satellite shows that more clouds are coming. We open at 00:28UT.

Night duration (12 degree - twilight) 01:20 - 12:50 UT = \* 11h\* \* 30m\*

Observing time: 5 h 40 min (50%)\*

Weather time loss: 3 h 50 min (33%)\*

Technical time loss: 2 h 00 min (17%)\*

## Data Summary

Project_R UN	Objects	Instrument	Configuration	ExpTime /Time_tot	Images	Notes
Calib						see log
Rossi DDT	GRB221009A	LUCI1+2	KK imaging	0.33h/0.33h		IQ~0.5"
Marini	Hen1-5(IRAS 20097+2010)	PEPSI-P FU	CD3-6	0.33h/0.1h		S/N~97 on CD6, ~60 on CD3. we increased the exp time from 3 to 10 due to clouds, but S/N still under requirement
Bellazzini	Gaia DR3 2633862890108653 696	PEPSI-P FU	CD3-6			S/N~100 on CD6, ~80 on CD3 in the first exposure. We did 2x30min

					due to clouds.
Bellazzini	Gaia DR3 1920638357490522 752	PEPSI-P FU	CD3-6		S/N~100 on CD6 and ~85 on CD3 on the first exposure
Bellazzini	Gaia DR3 2547150425277019 008	PEPSI-P FU	CD3-6		S/N ~90 on CD 6 and ~75 on CD3 on the first exposure
Bellazzini	Gaia DR3 2540596442621813 760	PEPSI-P FU	CD3-6		S/N
Tozzi_DDT	lens	LUCI1-2	G210-K	0.83h/2h	only 5 exp done, then close for humidiy, no telluric observed, but the point source in the slit can be use as a reference

Detailed log by Andrew at this link:

[https://drive.google.com/file/d/1Ar\\_7Zt3OTMYslGQ3P2qsmDBXm1hhtJYG/view?usp=sharing](https://drive.google.com/file/d/1Ar_7Zt3OTMYslGQ3P2qsmDBXm1hhtJYG/view?usp=sharing)

## INAF queue observing, 2022 Dec 02 - Dec 03

Observer: Andrew Cardwell

Telescope Operator: Josh Williams

Astronomers from Italy: Felice Cusano and Ester Marini

Instrument: PEPSI

### Summary

Due to the Covid-19 pandemic situation these observations have been performed by LBTO personel

through the indications of LBT Italian observers connected from Italy.

We have half night shared with PEPSI-POL. We start around midnight local time. Sky is completely covered by clouds 95% humidity at 07:10 we stay closed.

Night duration (12 degree - twilight) 07:10 - 13:00 UT = \* 5h\* \* 50m\*

half night Observing time: 0 h min (%)\*

Weather time loss: 5 h 50 min (100%)\*

Technical time loss: h min (%)\*

### Data Summary

Project_RUN	Objects	Instrument	Configuration	ExpTime /Time_tot	Images	Notes

Detailed log by Andrew at this link:

## INAF queue observing, 2022 Dec 03 - Dec 04

Observer: Andrew Cardwell

Telescope Operator: Josh Williams

Astronomers from Italy: Felice Cusano and Ester Marini

Instrument: PEPSI

### Summary

Due to the Covid-19 pandemic situation these observations have been performed by LBTO personel

through the indications of LBT Italian observers connected from Italy.

We have half night shared with PEPSI-POL. We start around midnight local time. Heavy rain on the summit, we stay close the all night.

Night duration (12 degree - twilight) 07:10 - 13:00 UT = \* 5h\* \* 50m\*

half night Observing time: 0 h min (%)\*

Weather time loss: 5 h 50 min (100%)\*

Technical time loss: h min (%)\*

### Data Summary

Project_RUN	Objects	Instrument	Configuration	ExpTime /Time_tot	Images	Notes

Detailed log by Andrew at this link:

## INAF queue observing, 2022 Dec 16 - Dec 17

Observer: Jenny Power

Telescope Operator: David Gonzalez Huerta

Astronomers from Italy: Andrea Rossi and Ester Marini

Instrument: MODS

### Summary

Due to the Covid-19 pandemic situation these observations have been performed by LBTO personnel

through the indications of LBT Italian observers connected from Italy.

Dense passing cirrus at sunset. After several IT technical issues, we start with MODS at ~3UT and with clear sky.

Night duration (12 degree - twilight) 01:20 - 13:20 UT = \* 12h \* 00m\*

half night Observing time: 8h 30min (70.8%)\*

Weather time loss: 0h 0min (0%)\*

Technical time loss: 3h 30min (29.2%)\*

### Data Summary

Project_R UN	Objects	Instrume nt	Configurati on	ExpTim e /Time_t ot	Images	Note s
STD	Feige110	MODS1+ 2	dualgrating			

Grazian_16	Q1137257	MODS1+ 2	dualgrating, slit 1.2"	0.25hrs	
Giannini	Gaia21csu	MODS1+ 2	dualgrating, slit 0.8"	0.5hrs	
Grazian_16	Q119922839	MODS1+ 2	dualgrating, slit 1.2"	0.25hrs	
Marini	IRAS 06556+1623	PEPSI-PF U	CD3-CD6		seeing ~240 on CD6 and ~145 on CD3
Bellazzini	GAIA DR3 3141565377831217 792	PEPSI-PF U	CD3-CD6		S/N ~60 on CD3 and ~135 on CD6
Bellazzini	GAIA DR3 7062350832347156 48	PEPSI-PF U	CD3-CD6		S/N ~65 on CD3 and ~140 on CD6
Bellazzini	GAIA DR3 6991046128891834 88	PEPSI-PF U	CD3-CD6		S/N ~60 on CD3 and ~130 on CD6
Bellazzini	GAIA DR3 9351813729632968 96	PEPSI-PF U	CD3-CD6		S/N ~70 on CD3 and ~150 on CD6

Bellazzini	GAIA DR3 9506369673976295 68	PEPSI-PF U	CD3-CD6	S/N ~70 on CD3 and ~140 on CD6
Bellazzini	GAIA DR3 5763923768536566 656	PEPSI-PF U	CD3-CD6	S/N ~65 on CD3 and ~130 on CD6
Bellazzini	GAIA DR3 3839165510915273 8	PEPSI-PF U	CD3-CD6	S/N ~70 on CD3 and ~140 on CD6
Bellazzini	GAIA DR3 5896630737499342 08	PEPSI-PF U	CD3-CD6	S/N ~75 on CD3 and ~140 on CD6
Decarli	PSO105.78	MODS1-2	red grating	seeing ~1", no visible spectrum on mods2!!
STD	Feige 34	MODS1-2	red grating	for Decarli, 1 exp: trace 7 times higher than background; 2 exp: still a decent trace, 3 exp: trace 2 times higher than background

d on both  
mods1-2

Detailed log by Jenny at this link:

<https://drive.google.com/file/d/1BTGPuTRaDJzvqoK3SS8mXUmkHfCOWP41/view?usp=sharing>

summary of MODS science files:

[https://drive.google.com/file/d/1QRIdeLrPa7AorfxxCA\\_y-TmQSmOcjX0p/view?usp=sharing](https://drive.google.com/file/d/1QRIdeLrPa7AorfxxCA_y-TmQSmOcjX0p/view?usp=sharing)

summary of MODS calib files:

[https://drive.google.com/file/d/1QjYmiO63VmP2b1N0Gx\\_PU-omHOGf5WLO/view?usp=sharing](https://drive.google.com/file/d/1QjYmiO63VmP2b1N0Gx_PU-omHOGf5WLO/view?usp=sharing)

## INAF queue observing, 2022 Dec 17 - Dec 18

Observer: Jenny Power

Telescope Operator: David Gonzalez Huerta

Astronomers from Italy: Felice Cusano and Ester Marini

Instrument: PEPSI

### Summary

Due to the Covid-19 pandemic situation these observations have been performed by LBTO personnel

through the indications of LBT Italian observers connected from Italy.

There are some cirrus at the sunset, we start with PEPSI,

Night duration (12 degree - twilight) 01:20 - 13:20 UT = \* 12h\* \* 00m\*

Observing time: 3h 40min (30.5%)\*

Weather time loss: 8h 0min (66.7%)\*

Technical time loss: 0h 20min (2.8%)\*

### Data Summary

Project_RUN	Objects	Instrument	Configuration	ExpTime/Time_tot	Images	Notes
Calib	flar,arc, dark	MODS, LUCI				
Marini	V1027 Cyg	PEPSI-PF U	CD3-CD6			cirrus ~ 1.5 mag extinction
Marini	LS II+34 26	PEPSI-PF U	CD3-CD6			
Marini	EM*VES 351	PEPSI-PF U	CD3-CD6			
Bellazzini	Gaia DR3 2540596442621813 760	PEPSI-PF U	CD3-CD6			
Bellazzini	Gaia DR3 3673058136084028 16	PEPSI-PF U	CD3-CD6			
Bellazzini	Gaia DR3 1099923845853558 912	PEPSI-PF U	CD3-CD6			took 15 minutes more due to clouds
Bellazzini	Gaia DR3 11104133585818964 48	PEPSI-PF U	CD3-CD6			Lost all flux in the last 10 sec of

Detailed log of the night by Jenny Power at this link:

<https://drive.google.com/file/d/15Bh6CxdWxKBtrkKzneyJ3JuxheShycGS/view?usp=sharing>

summary of MODS calib files:

<https://drive.google.com/file/d/14Wjtj6220DX-OseRk9LrYFYkPSxNd41o/view?usp=sharing>

summary of LUCI calib files:

<https://drive.google.com/file/d/192z0siSdZArVtCh3yaDa0VVoGtIKi5s2/view?usp=sharing>

## INAF queue observing, 2022 Dec 18 - Dec 19

Observer: Alex Becker

Telescope Operator: David Gonzalez Huerta

Astronomers from Italy: Felice Cusano and Andrea Rossi

Instrument: LUCI

### Summary

Due to the Covid-19 pandemic situation these observations have been performed by LBTO personnel

through the indications of LBT Italian observers connected from Italy.

99% humidity and clouds. Later IT problems. We open at 12:10 UT

Night duration (12 degree - twilight) 01:20 - 13:20 UT = \* 12h\* \* 00m\*

Observing time: 1h 5min (9%)\*

Weather time loss: 8h 40min (73%)\*

Technical time loss: 2h 15min (18%)\*

### Data Summary

Project_RUN	Objects	Instrument	Configuration	ExpTime/Time_to_t	Images	Notes
Palazzi	SLSN2020abc	MODS1+2	dual imaging	8m		
Mazzolari	ID774	MODS1+2	dual grating 1.2"	10+10m		shortened from 900s because of twilight
STD	Feige34	MODS1+2	dual grating			just 2 120s exposures

Detailed log by Alex at this link:

[https://drive.google.com/file/d/1prD8GyD48KPJRx8YfuBof05GuJNnRtqo/view?usp=share\\_link](https://drive.google.com/file/d/1prD8GyD48KPJRx8YfuBof05GuJNnRtqo/view?usp=share_link)

summary of MODS science files:

<https://drive.google.com/file/d/192z0siSdZArVtCh3yaDa0VVoGtIKi5s2/view?usp=sharing>