

# Foreword

StarDICE pre-survey workshop

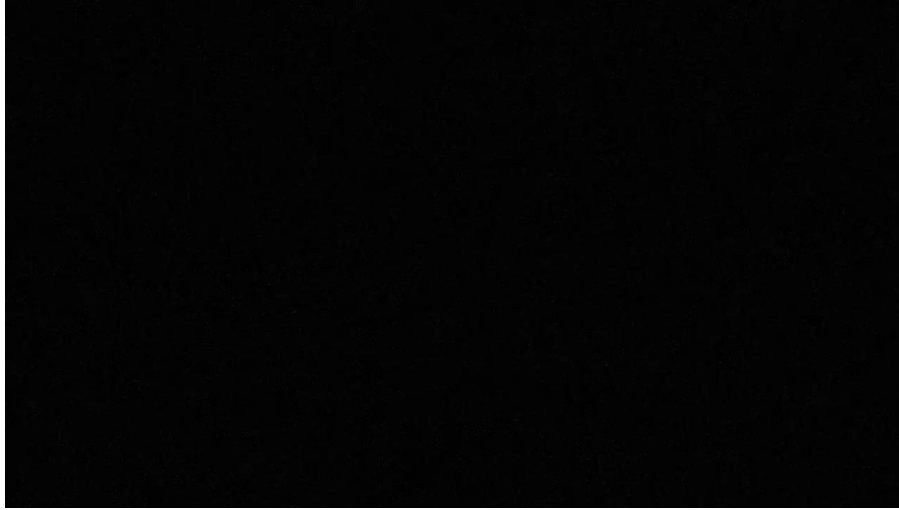
LPNHE, 28 novembre 2023



Marc Betoule



## ● The StarDICE instrument is taking data



- Deal with OHP for the pre-survey: day-time interventions on working days
  - -> Observations up to 5 nights per week (sunday to thursday) on the conditions:
    - Night is clear
    - No rain in the next day forecast
  - Last week 4/5 nights were meeting these criteria
  - Current statistics is 10 clear nights
  - Winter nights are long (about 3000 images per night)
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# News from the OHP

## ENTRE

Le Laboratoire de Physique Nucléaire et Hautes Energies (UMR 7585) représenté par son Directeur Monsieur Marco Zito.

## D'UNE PART ET

L'unité d'Appui et de Recherche (UAR 3470) de l'OSU Institut Pythéas représenté par son Directeur-Adjoint en charge de l'OHP, Monsieur Marc Ferrari.

## D'AUTRE PART

## IL EST CONVENU CE QUI SUIT :

Vu l'accord de collaboration scientifique du Projet StarDICE à l'OHP signé entre les parties le 25 septembre 2020 pour une durée de trois ans,

## ARTICLE UNIQUE :

L'article 6 « DURÉE » de l'accord est modifié comme suit : Le présent accord est prolongé d'une durée d'un an à partir de la date anniversaire de signature de l'accord initial, soit à compter du 25 septembre 2023.

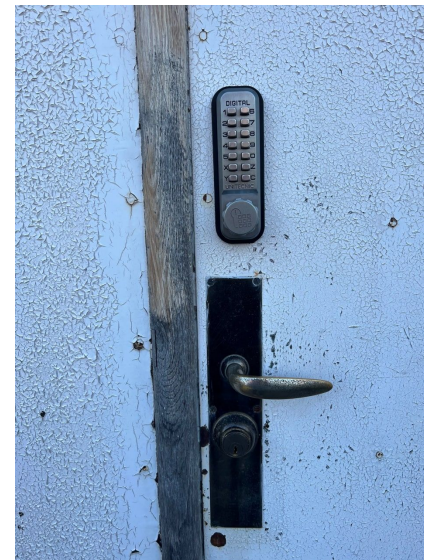
A Saint-Michel l'Observatoire, le 27 novembre 2023

Le Directeur-Adjoint de l'OSU Institut Pythéas,  
en charge de l'OHP  
M. Marc Ferrari

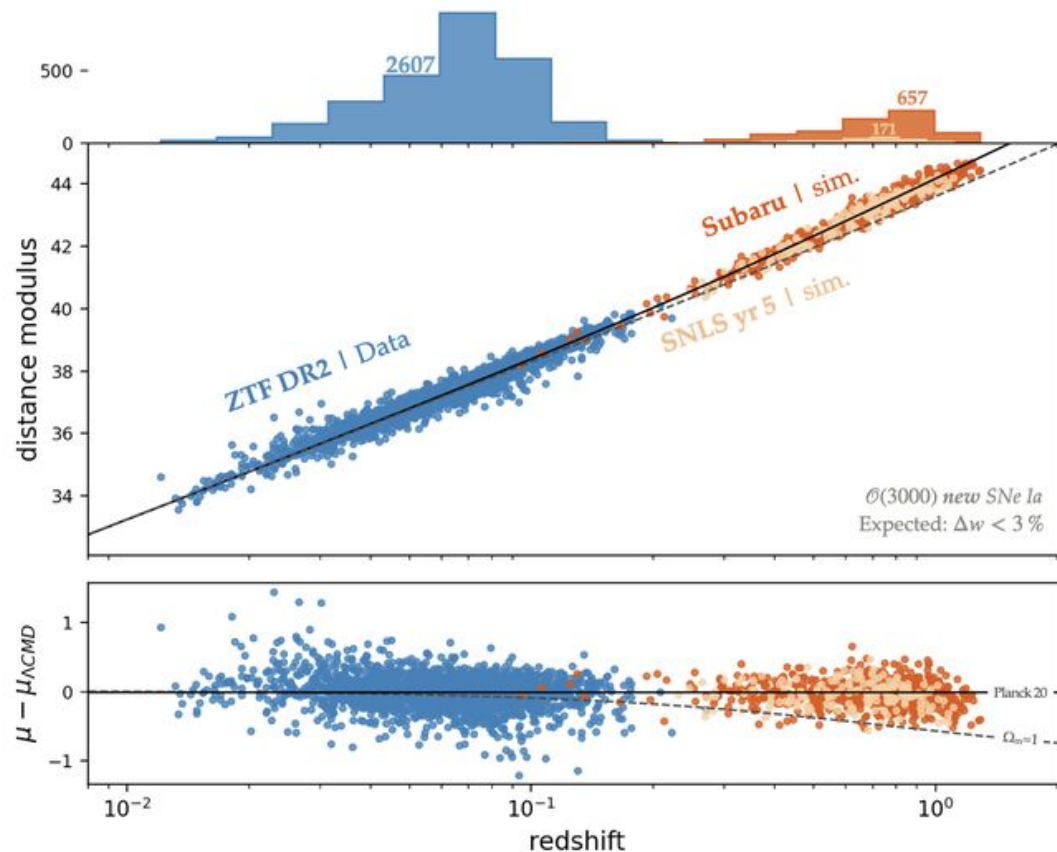
Le Directeur du LPNHE  
M. Marco Zito

  
**OSU INSTITUT PYTHEAS**  
**UAR 3470 du CNRS**  
Observatoire de Haute Provence  
04870 St Michel l'Observatoire  
Tél. : 04 92 70 65 40

- The MOU has been renewed
- The lock has been replaced
- We think we found the origin of one of the leaks in the roof



# Scientific Context : The LEMAÎTRE diagram



Latest Extended Mapping of Acceleration with an Independent Trove of Redshifted Explosions: ongoing effort of a joint analysis of ZTF+SNLS+HSC supernovae

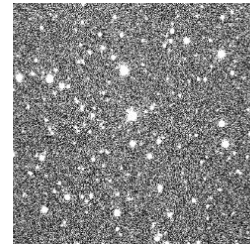
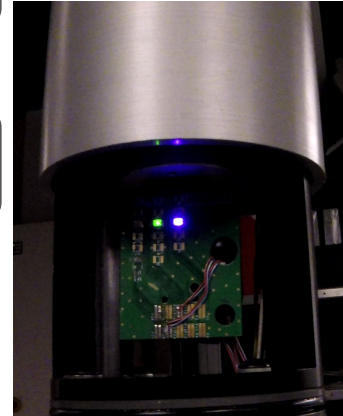
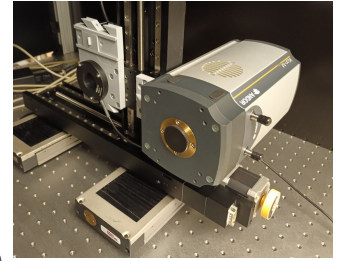
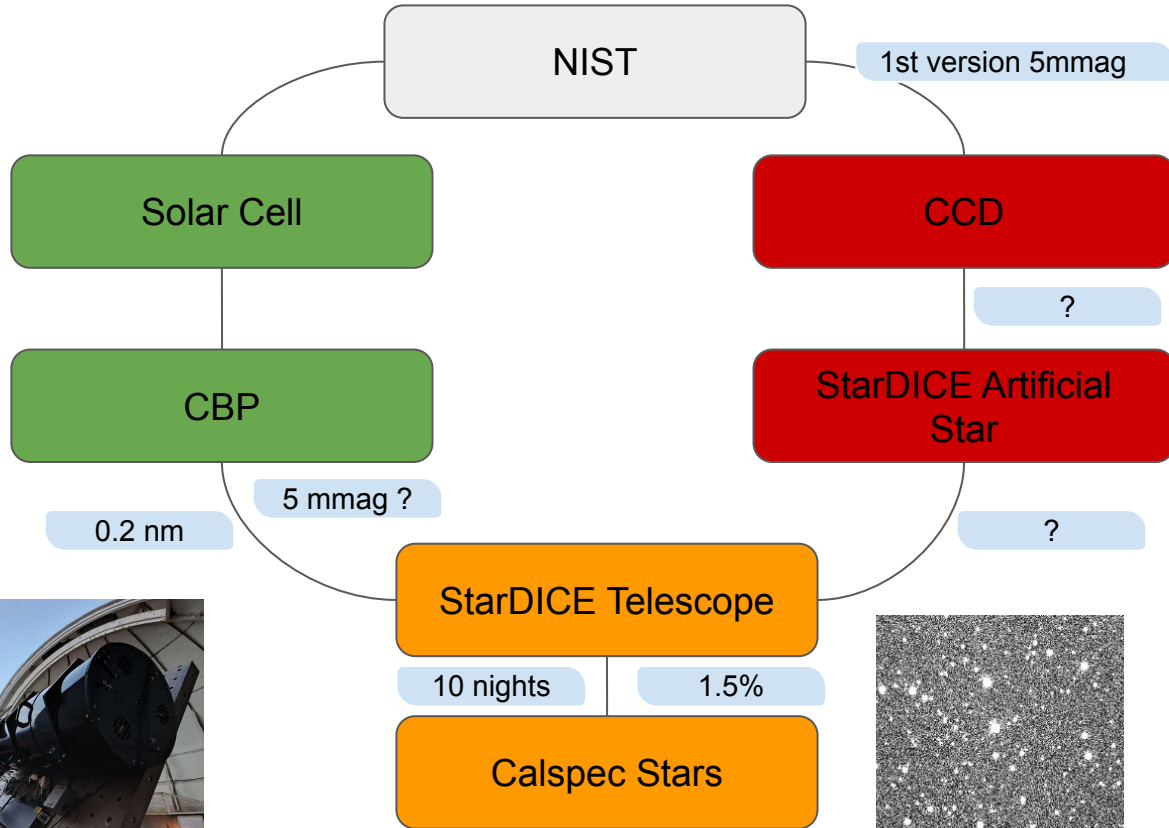
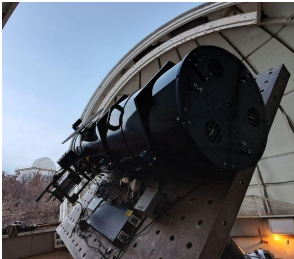
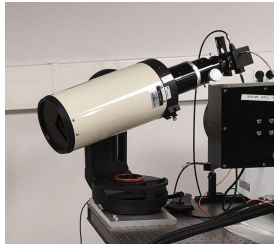
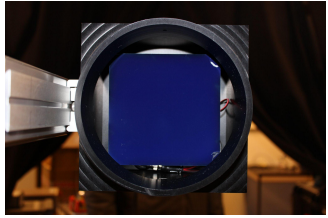
Coincidental with ZTF DR2.5 (June 2024)

We are positioned to put the first instrumental constraints on this Hubble diagram

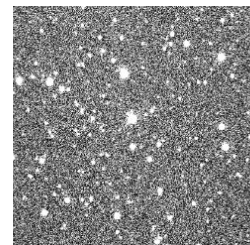
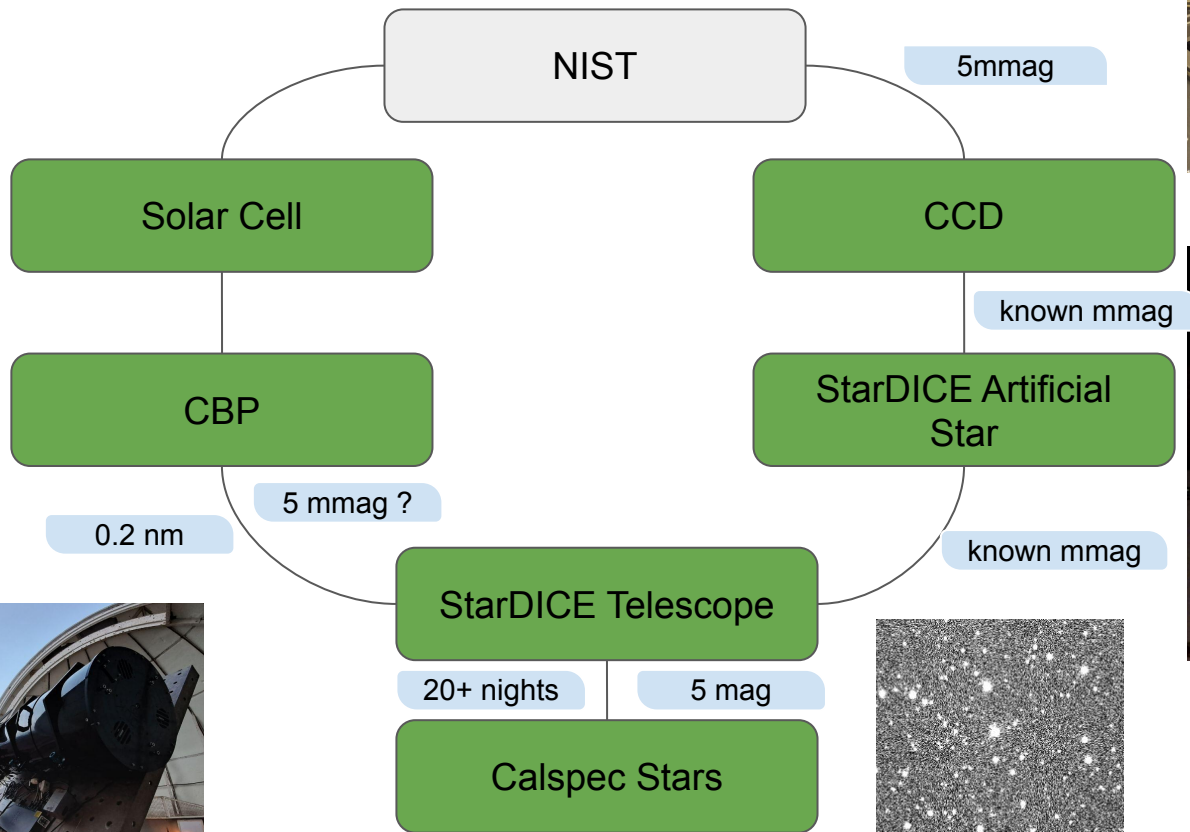
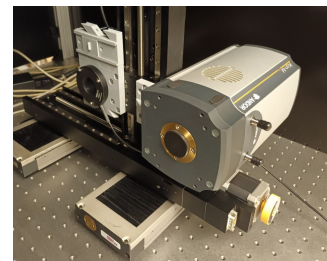
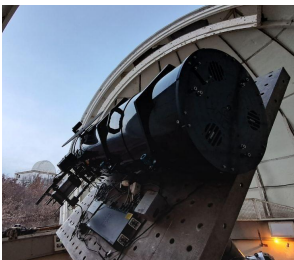
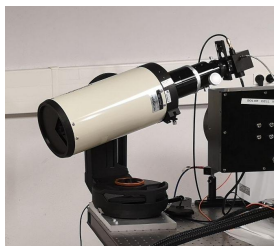
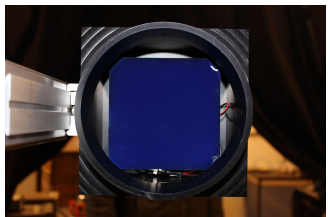
This provides a unique opportunity to promote the work made in StarDICE

Anything at the level of 5mmag is already interesting

# StarDICE + CBP Status overview



# Pre-survey goal





# Workshop objectives

mar. 28/11

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14:00	<b>Foreword</b> <i>Salle des conseils (12-13 RC 11), LPNHE</i>	<i>Marc Betoule</i> 14:00 - 14:15
	<b>Reduction of photometric data</b> <i>Salle des conseils (12-13 RC 11), LPNHE</i>	<i>Marc Betoule</i> 14:15 - 14:35
	<b>Preliminary analysis of photometric data</b> <i>Salle des conseils (12-13 RC 11), LPNHE</i>	<i>Thierry Souverin</i> 14:35 - 14:55
15:00	<b>Coffee break</b> <i>Salle des conseils (12-13 RC 11), LPNHE</i>	15:15 - 15:45
	<b>Calibration of the infrared camera</b> <i>Salle des conseils (12-13 RC 11), LPNHE</i>	<i>Kélian SOMMER</i> 15:45 - 16:05
16:00	<b>Infrared camera data reduction</b> <i>Salle des conseils (12-13 RC 11), LPNHE</i>	<i>Kélian SOMMER</i> 16:05 - 16:25
	<b>Preliminary analysis of infrared data</b> <i>Salle des conseils (12-13 RC 11), LPNHE</i>	<i>Kélian SOMMER et al.</i> 16:25 - 16:45

- Present the current status of the analysis and hardware
- Discuss the science issues
- Set up a plan and organize the work to reach the pre-survey goal
- Write down and save up extra ideas and extended plan for the final survey

# Workshop objectives

mer. 29/11

09:00	<b>Final version of the artificial star electronics</b> <i>Salle des conseils (12-13 RC 11), LPNHE</i>	<i>Eduardo sepulveda et al.</i> 09:00 - 09:15
	<b>Artificial star mechanical design and integration</b> <i>Salle des conseils (12-13 RC 11), LPNHE</i>	<i>Eduardo sepulveda et al.</i> 09:15 - 09:30
	<b>Stability analysis and LED selection</b> <i>Salle des conseils (12-13 RC 11), LPNHE</i>	<i>Sébastien Bongard</i> 09:30 - 09:45
	<b>Development of the artificial star calibration bench</b> <i>Salle des conseils (12-13 RC 11), LPNHE</i>	<i>Laurent Le Guillou</i> 09:45 - 10:00
10:00	<b>Calibrated sensors for the artificial star</b> <i>Salle des conseils (12-13 RC 11), LPNHE</i>	<i>Claire JURAMY-GILLES et al.</i> 10:00 - 10:15
	<b>Coffee break</b> <i>Salle des conseils (12-13 RC 11), LPNHE</i>	10:35 - 11:00
11:00	<b>CBP calibration</b> <i>Salle des conseils (12-13 RC 11), LPNHE</i>	<i>Jérémy Neveu et al.</i> 11:00 - 11:40
	<b>Modèle of the StarDICE telescope based on CBP measurement</b> <i>Salle des conseils (12-13 RC 11), LPNHE</i>	<i>Marc Betoule</i> 11:40 - 12:00
12:00	<b>Lunch break</b>	

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# Workshop objectives

13:00	Salle des conseils (12-13 RC 11), LPNHE	12:00 - 13:30
	<b>Fast computation of atmospheric transmissions</b>	Dr Sylvie Dagoret
	Salle des conseils (12-13 RC 11), LPNHE	13:30 - 13:50
	<b>Slitless spectroscopy in Auxtel</b>	Jérémy Neveu
14:00	Salle des conseils (12-13 RC 11), LPNHE	13:50 - 14:10
	<b>Preliminary extraction of slitless spectra in the StarDICE data</b>	Jérémy Neveu et al.
	Salle des conseils (12-13 RC 11), LPNHE	14:10 - 15:00
15:00	<b>Coffee break</b>	
	Salle des conseils (12-13 RC 11), LPNHE	15:00 - 15:30
	<b>Towards a global fit: Proposed plan</b>	Marc Betoule
	Salle des conseils (12-13 RC 11), LPNHE	15:30 - 15:50
16:00	<b>Work Session on the global fit</b>	
	Salle des conseils (12-13 RC 11), LPNHE	15:50 - 17:00

jeu. 30/11

09:00	<b>Work Session: amending the global fit</b>	
	Salle des conseils (12-13 RC 11), LPNHE	09:00 - 09:50
10:00	<b>Global fit: concluding remarks</b>	
	Salle des conseils (12-13 RC 11), LPNHE	09:50 - 10:10

- Present the current status of the analysis and hardware
- **Discuss the science issues and set up a plan**
  - **In depth discussion of all the aspects of the analysis**
  - **Prioritize the work**
  - **We have a workshop dinner at 19h30 on Wednesday evening**
- Organize the work to reach the pre-survey goal
- Write down and save up extra ideas and extended plan for the final survey

# Workshop objectives

jeu. 30/11

09:00	<b>Work Session: amending the global fit</b> Salle des conseils (12-13 RC 11), LPNHE	09:00 - 09:50
10:00	<b>Global fit: concluding remarks</b> Salle des conseils (12-13 RC 11), LPNHE	09:50 - 10:10
	<b>Coffee break</b> Salle des conseils (12-13 RC 11), LPNHE	10:15 - 10:45
	<b>Publication plan: a proposition</b> Salle des conseils (12-13 RC 11), LPNHE	Marc Beteoule 10:45 - 11:00
11:00	<b>Discussion: sketching the plan</b> Salle des conseils (12-13 RC 11), LPNHE	11:00 - 12:00
12:00	<b>Lunch break</b> Salle des conseils (12-13 RC 11), LPNHE	12:00 - 13:30
13:00	<b>Discussion of potential upgrades for the full survey</b> Salle des conseils (12-13 RC 11), LPNHE	Marc Beteoule 13:30 - 15:00
14:00		
15:00	<b>Ongoing: Concluding remarks</b> Salle des conseils (12-13 RC 11), LPNHE	15:30 - 16:00
16:00		

- Present the current status of the analysis and hardware
- Discuss the science issues
- **Set up a plan and organize the work to reach the pre-survey goal**
- **Write down and save up extra ideas and extended plan for the final survey**
  - There is a dedicated google doc to keep track of the ideas in this session:

[https://docs.google.com/presentation/d/1nVVw6jx3Yi7Ty\\_Ns3WF7KIYW7Ebr8RBz021I3U39r5s/edit?usp=sharing](https://docs.google.com/presentation/d/1nVVw6jx3Yi7Ty_Ns3WF7KIYW7Ebr8RBz021I3U39r5s/edit?usp=sharing)

- If they are topics that you want to see discussed in this session please add two slides in the dedicated document it to support the discussion