

General news

Rubin-
LSST

Emmanuel Gangler – LSST-France – May 25th 2021

Cécile Renault



À moins, évidemment que
l'inflation n'ait jamais eu lieu... « Mais,
même dans ce cas, nous n'aurons pas perdu
notre temps », rétorque Cécile Renault,
Journal du CNRS 2013

19.07.1970 – 05.04.2021

Welcome to our new members !

- **Welcome to:**
 - Stéphane, Stéphane, Benoît, Pierre-Alain, Raphael, Axel, Daniel, Marine, Denise, Quentin, Olivier, Estelle, Jérémie, Susanna, ...
 - ... and to our interns and future PhD students (stay tuned for next LSST-France meeting)!
- **INSU members:** (see this afternoon talks)
 - From Cosmologie et Galaxies (PNCG): LAM – Marseille, Obs. Strasbourg, AIM – Saclay
 - Physique Stellaire (PNPS): LAM
 - Planétologie (PNP): LAGRANGE – Nice, IMCCE – Paris, UTINAM – Besançon
 - Hautes Energies (GEPI – Meudon, IRAP – Toulouse)
- **Some background material:**
 - S. Kahn Video presentation on Rubin (38 min)
 - An Introduction to Rubin (PCW Workshop Aug. 2020)
 - Slides and Report for IN2P3 scientific council (Oct 27th 2020)

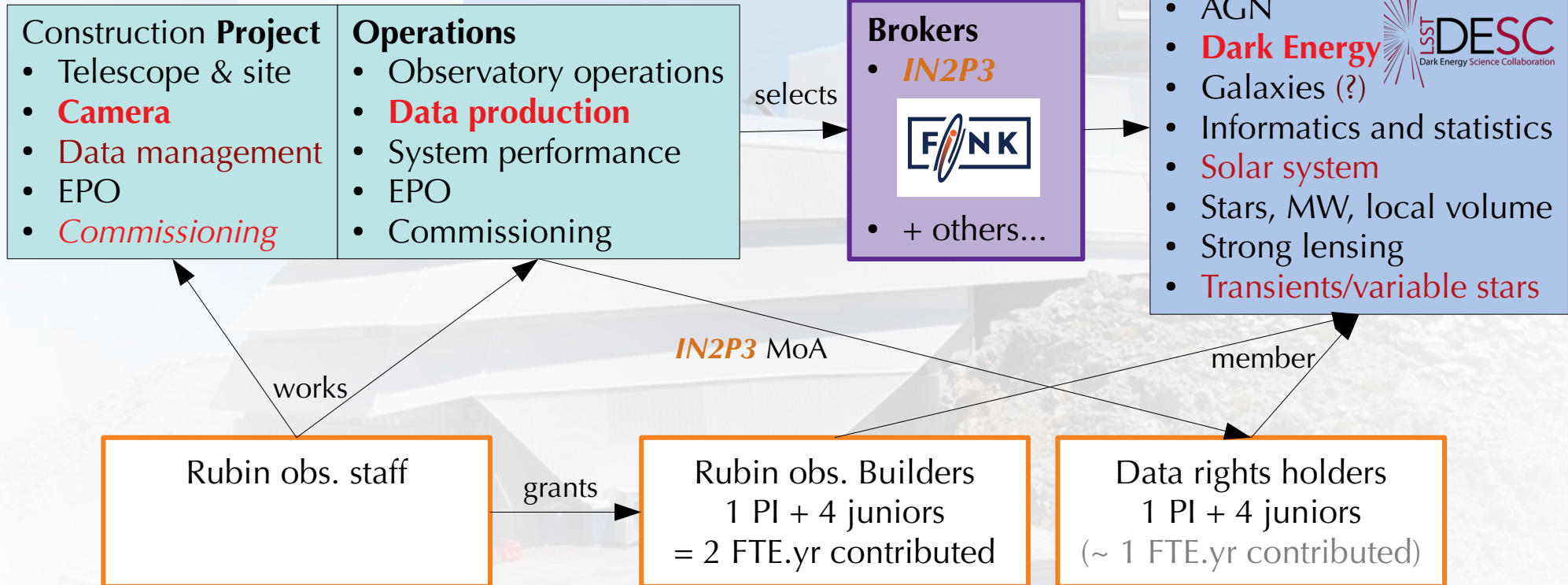
Welcome to our new members !

- **Getting started:**
 - We already had dedicated meetings with some groups: LAM and PNPS
 - Others: don't hesitate to reach out to us.
- **Don't forget:**
 - to **check the starting pages** <https://doc.lsst.eu/>
 - to register on LSST-L (for INSU or CEA): still the main mailing list. Use it.
 - Or LSST-IN2P3-L (for IN2P3 data rights holders) mailing list. Low traffic.
 - to register on Slack lsst-france
 - to **join a scientific collaboration**
 - this is not mandatory, but highly recommended
 - all collaborations are independent
 - Note : **updating Data Rights holder list is more challenging than expected.** Address back enquiries to me!

Onboarding INSU

- **Philosophy: a joint French effort !**
 - France represents ~5 % of all Rubin effort (Budget, manpower...)
 - Joining forces is needed to weigh in
 - Shared expertise makes all of us do better science (photo-z, transients, ...)
 - A single category for Rubin obs: French Data Rights holders
 - This includes access to US Data Access Center
 - IN2P3 holds the MoA : a few side effects
 - I'll try to mitigate them as much as possible
 - Access to CC-IN2P3 is granted for technical or collaboration-related work
 - Examples: DP0, DESC, FINK

A complex ecosystem...



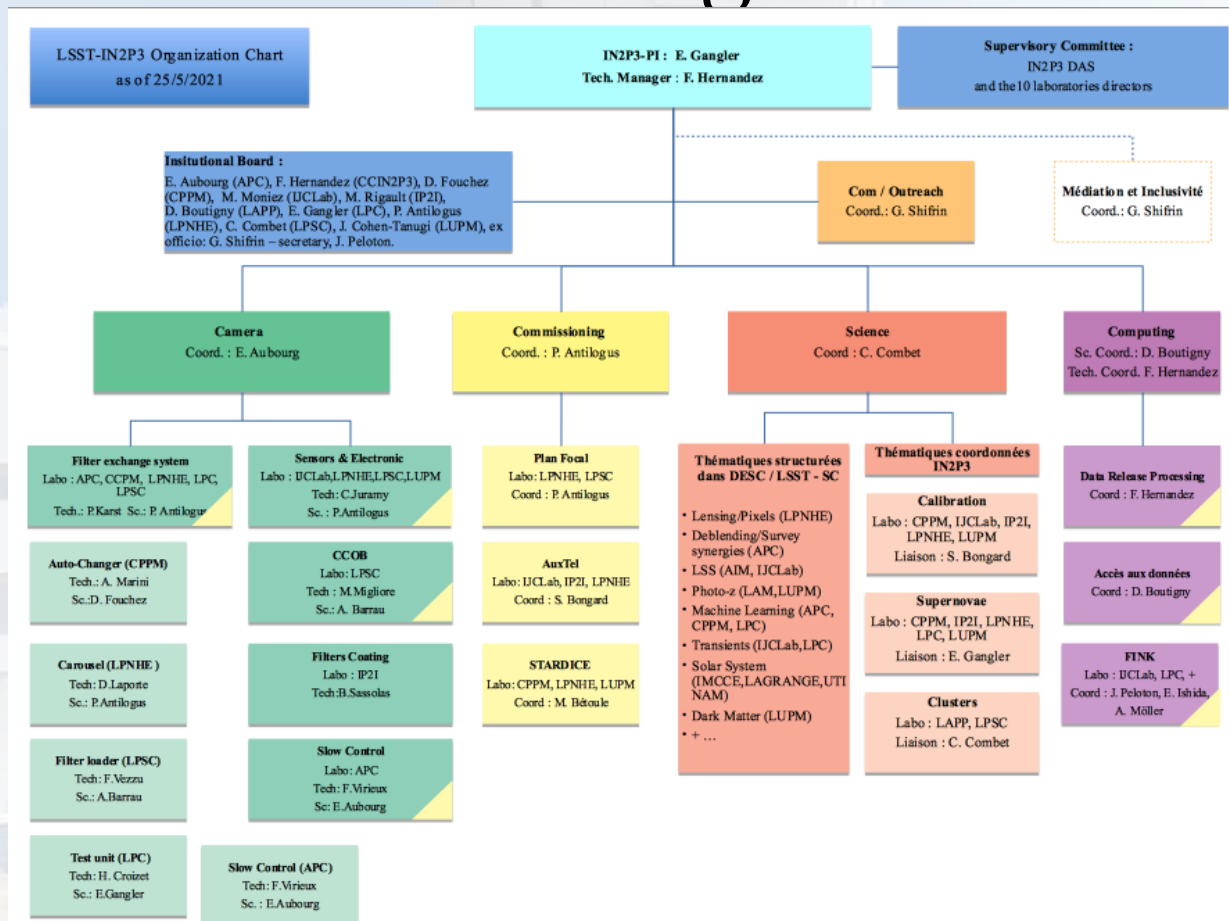
Internal Rubin-LSST France organization

Remarks:

- Institutional board: IN2P3 coordination
 - Centered on IN2P3 matters
 - + DESC news
- ZTF and SSP not represented here (not Rubin-related)
- Fink will become an IN2P3 project once selected by Rubin

Hot topics:

- **Commissioning:** see C. Juramy's talk and Wed sessions
- **Computing:** see Fri session by D. Boutigny



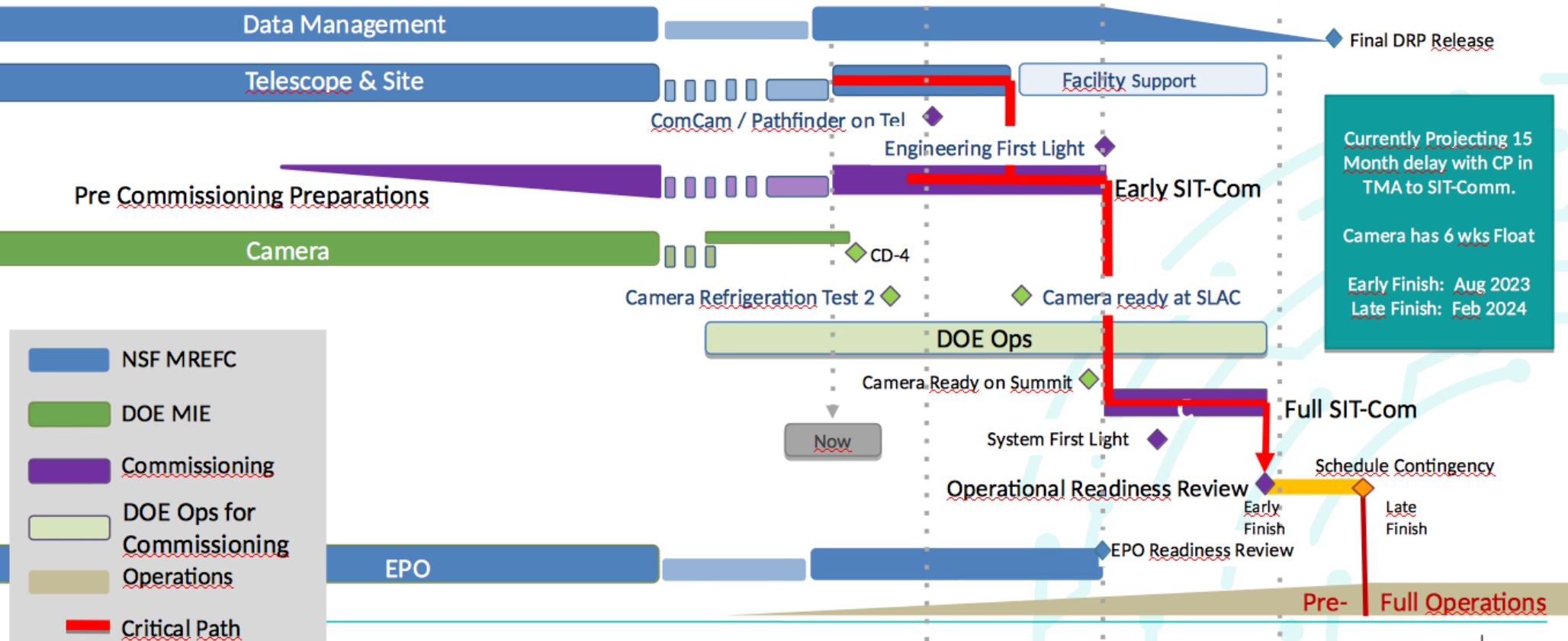


News from Rubin obs. and DESC



Rubin Schedule – Projecting 15 Month COVID Delay

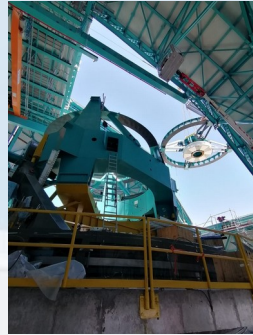
VE OB	CY2017				CY2018				CY2019				CY2020				CY2021				CY2022				CY2023				CY2024							
	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
	FY2017				FY2018				FY2019				FY2020				FY2021				FY2022				FY2023				FY2024							
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4



Construction status

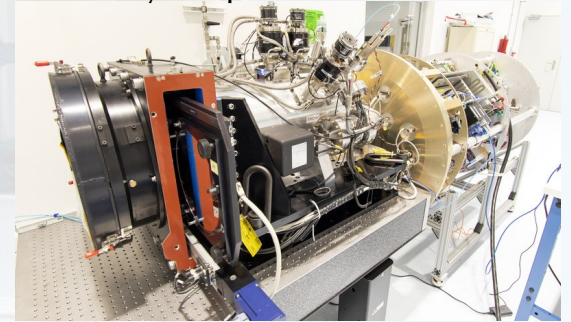


Dome assembled



Teloscope mount assembly

ComCam arrived in Chile
(on sky : Sep 2022)



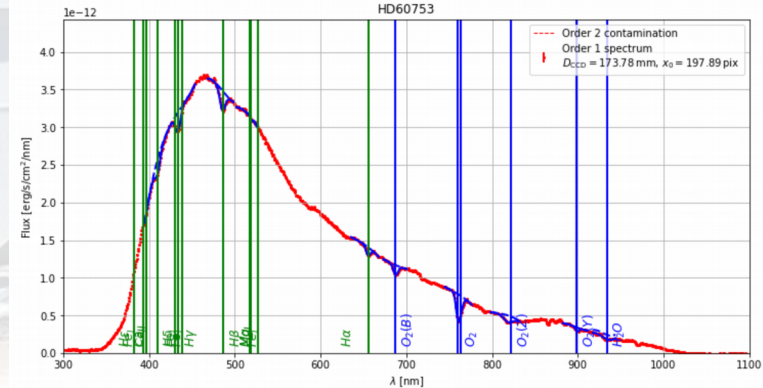
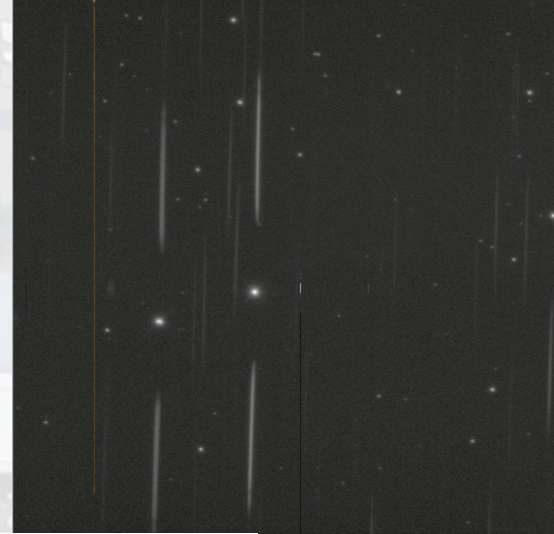
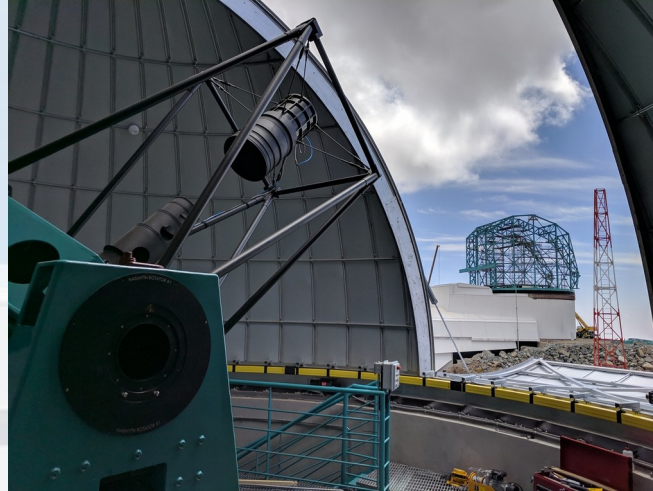
r-band filter arrived at SLAC



(More on this next talk)

AuxTel

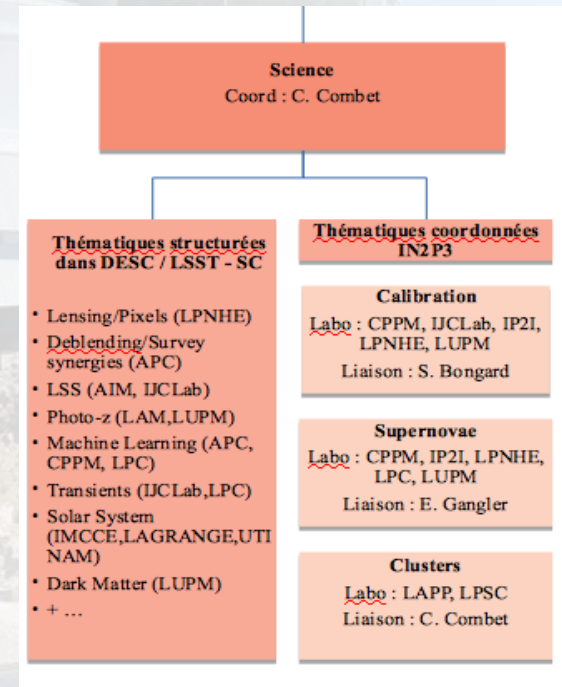
- Auxiliary telescope to monitor atmospheric transmission
 - Data taking resumed in February
 - Spectrograph with holograms made at IJCLab
 - See upcoming IN2P3 news
 - Ongoing spectral reduction at LPNHE
 - More on this tomorrow



What's new ?

Médiation et Inclusivité
Coord.: G. Shifrin

- **Equity Diversity Inclusion:**
 - A hot topic for our US colleagues
 - Many thanks to G. Shifrin for the French counterpart
 - Please **fill in the survey** no later than Wed 26th
- **Science:**
 - Update of the organization chart:
 - Aim is to be descriptive rather than prescriptive
 - Science is bottom-up !
 - All themes are represented with **LSST science collaborations**
 - This is the **natural place for international collaboration**
 - Some themes have strong French participation/structuration
 - Identified as many labs + a named liaison
 - List is supposed to *evolve with time*
 - New themes/labs ; newly identified coordinations



Computing and Data Preview 0 (DP0)

- **Ramping up for US Data Facility (USDF)**
 - Richard Dubois director of USDF
 - Interim Data Facility (IDF): Google cloud
- **DP0: 300 delegates = Users testing Rubin Science Platform (RSP)**
 - 1st opportunity at accessing data the Rubin way !
 - DESC DC2 data (Korytov 2019, DESC 2021): 300 sq. degrees simulated sky for 5 years of observations
 - **DP0 dataset is already available at CC-IN2P3.** A preview of the RSP is in preparation (More on this Friday)
 - 3 French scientists have applied to be delegates (Data Management people didn't need to apply)
 - Project selection by May 31st
- **DP1: data with ComCam (~Q4 2022)**
- **DP2: commissioning data with LSSTCam (2023)**
- **Note about commissioning:**
 - DP1 or 2 data will come (at best) with a 30 days lag... better be part of the Rubin team instead !

Enabled by Qserv...



Qserv at IN2P3

An instance of Qserv is up and running at IN2P3

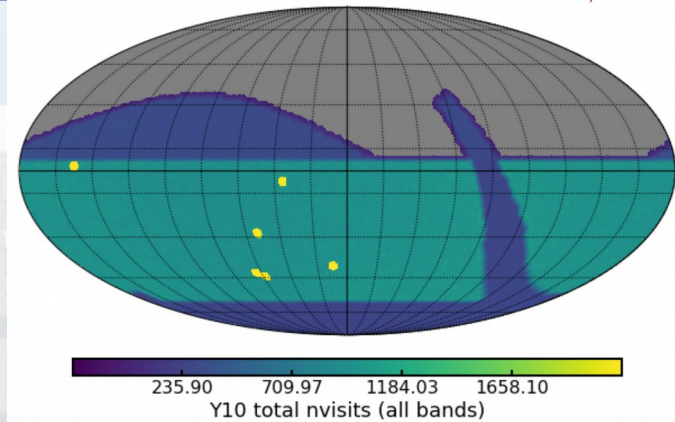
- 20 workers, 2 managers, ~1.3 Pbyte disk
- Currently hosting DC2 data (Run2.2i dr6) and cosmoDC2
- DP0 (Rubin Data Preview 0) ingest in progress
- Will also load **add-ons (MC truth, photo-z, etc.)** and **skySim5000**

Testbed for

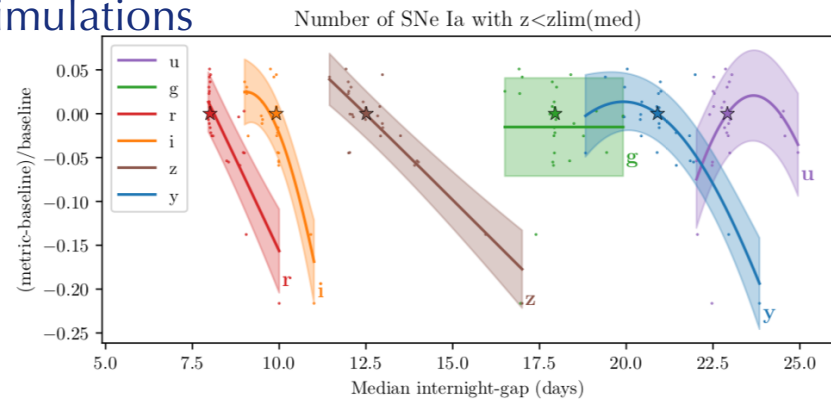
- **Large datasets**
- **Using multiple datasets**
- **Galaxy cluster analysis**

Dominique Boutigny, Sabine Elles, Bastien Gounon, Fabrice Jammes and the CC-IN2P3 Rubin support team

Cadence



- 38 answers to call for cadence notes
- **Major endeavor within DESC** (see Lochner 2021)
 - Q1 Footprint: wider is better for static science statistics, deeper is better for systematics control and transients
 - Q2 Additional time: recommend rolling deep fields + extra LSST time (crucial for SN)
 - Q3&4&5 Filters: u-band not critical, less y-band may improve cosmology, recommend visit pairs in different filters
 - Q6 Rolling cadence: asks for better rolling cadences simulations
 - Q7 Dithering: baseline Ok, large dithers impair DDFs
- Next SCOC workshop Nov 16-17
- More on this: see talk by P. Gris (Thu)

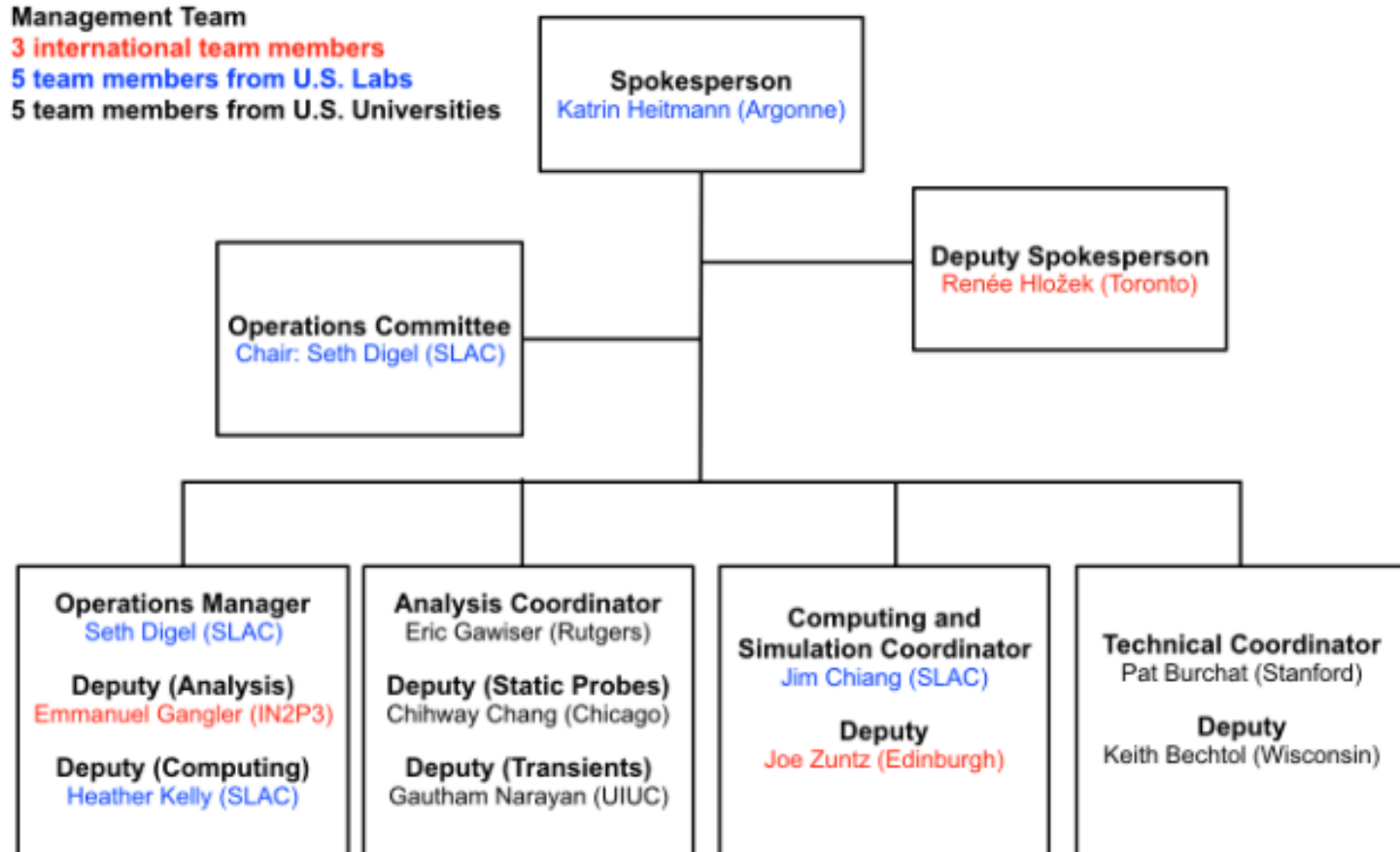


Other news from Rubin

- **Brokers:** See FINK presentation tomorrow
 - Successful Community Broker workshop in April (~100 participants)
 - Selection by June 30th
- *Review of in kind proposals finished in April*
 - IN2P3 is not part of this process. It starts to be a major issue.
- *Forum for Rubin/Euclid Derived Data Products: meeting June 30th*
 - F. Lanusse (Rubin) and E. Aubourg (Euclid) in the committee
- **Roadmap for photo-z**
 - Call for Letter of Recommendation by Sep 30th
 - Project photo-z vs DESC photo-z raises somme issues
- **Staff Highlights: 2 IN2P3 members last 6 months** →
- **Project & Community Workshop : 9-13 August (in remote)**



DESC news: management transition



In addition: France well represented at all levels of DESC committees

New Data Facility Committee

Onboarding international members

1. **Brazil: Brazilian Participation Group**
2. Canadian LSST Consortium
3. Germany: GCCL
4. Germany: LMU Munich
5. India: IUCAA-led consortium
6. Italy: INAF
7. Japanese Participation Group
8. Mexico: UNAM-led consortium
9. Netherlands: Utrecht, Leiden
10. Poland: NCBJ
11. South Africa: SARAO
12. **Spain: Barcelona-Madrid**
13. Sweden: Stockholm
14. Switzerland: EPFL
15. Switzerland: ETH
16. **UK: LSST:UK**
17. UK: Oxford

*Groups that have committed DESC Operations personnel (several other groups may do so, but funding is pending)

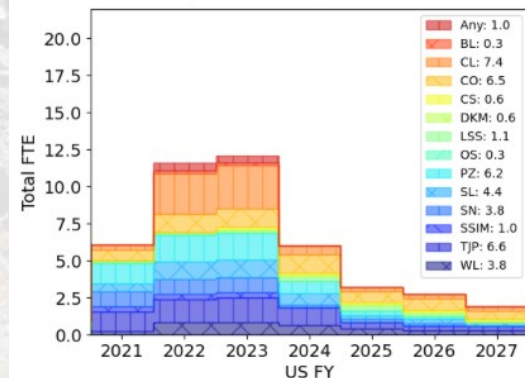
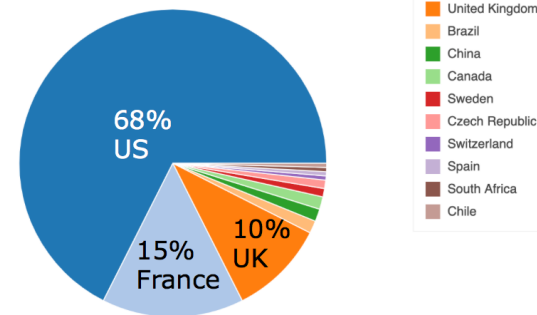
Note: **IN2P3/France** is not listed because their data rights are based purely on contributions to Rubin Observatory.

Major impact of International in kind on infrastructure

Key decisions to be made in the coming years

→ crucial to be present

LSST DESC Full Members by country



Some DESC highlights of French recent activity

Spark (by S. Plaszczynski)



Overdensity in SkySim5000 - image credit: Stéphane Plaszczynski (IJCLAB/IN2P3).

Software :

- RAIL (photo-z – F. Lanusse, J. Cohen-Tanugi)
- sn_pipe (SNIa – P. Gris)
- CLMM (clusters – C. Combet)

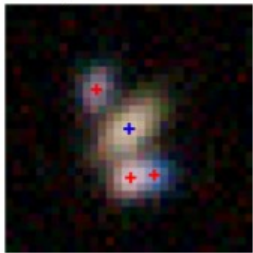
SMALTT Topical Team
(with participation of A. Möller)



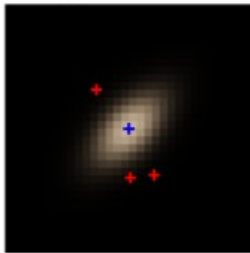
New builder:

- J. Cohen-Tanugi (DC2)

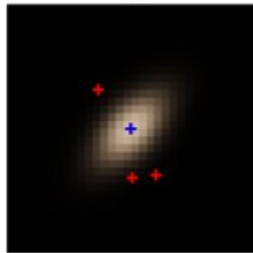
Deblending DESC paper (by B. Arcelin)



input Deblender

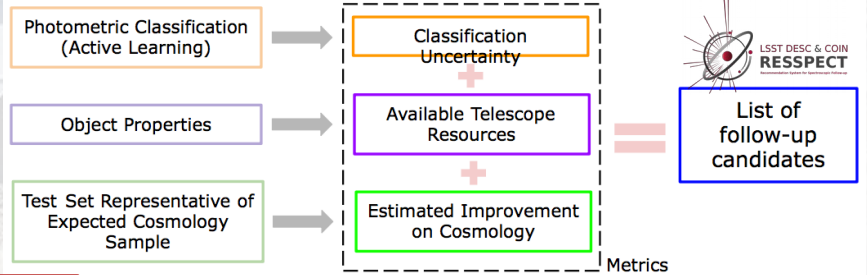


output Deblender



target

RESSPECT (led by E. Ishida)



Survey Strategy:

- P. Gris, N. Regnault, T. Blaineau, M. Moniez

The path forward

- **Commissioning** and **computing** are the obvious next steps
 - I would like to see more people focussing on these
 - Call for Commissioning by Rubin pending – don't miss it
 - Better addressed from within project
 - These will be **priority items for HR/budget requests** at IN2P3
- **Very good involvement within DESC...**
 - Work should continue this way !
 - Some points requiring attention:
 - Promoting **technical work** at DESC-wide level (PSF, calibration...)
 - French **supernova effort** focussed today on ZTF and SSP
 - Use of **CC resources** (including FINK) **for DESC** when survey starts
- **Exciting times for students: starting PhDs will see first LSST data !**

Acronyms

- AGN: Active Galaxy Nuclei
- CCOB: Camera Calibration Optical Bench
- ComCam: Commissioning Camera
- DESC: Dark Energy Science Collaboration
- DC2: DESC Data Challenge 2
- DP0,DP1,DP2 : Data Preview 0,1,2
- EPO: Education and Public Outreach
- FTE: Full Time Equivalent
- FINK: The French broker (not an acronym)
- LSS: Large Scale Structures
- LSST: Rubin Observatory Legacy Survey of Space and Time
- LSSTCam: LSST Camera
- LSST – SC: LSST Science collaboration
- MoA: Memorandum of Agreement
- MW: Milky Way
- PCW: Project and Community workshop
- PI: Principal Investigator
- RSP: Rubin Science Platform
- SCOC: Survey Cadence Optimizing Committee
- SSP: Subaru Supernova Project
- ZTF: Zwicky Transient Facility