



MaDICS

MAESTRO



**MAsses de données En ASTROnomie
et astropysique**

Contexte international

GAIA
plus d'un milliard d'objets de notre Galaxie
> 250 attributs

The image shows the Gaia satellite, a large cylindrical instrument with a wide, flat, circular solar panel array extending from its side, set against a dark background.

Pan-Starrs
6,000 deg² per night.
several terabytes per night for the full telescope.
hundreds of Peta bytes.

The image features a night sky filled with stars and a nebula. A small inset in the top left shows a close-up of the Pan-STARRS telescope's dome.

LSST (2020) : 3 Billions pixels every 17 seconds.
140 petabytes

The image shows a vast field of stars and galaxies. A small inset in the top left shows the LSST telescope dome on a hillside.

SKA
SQUARE KILOMETRE ARRAY

SKA TELESCOPE
SQUARE KILOMETRE ARRAY
Exploring the Universe with the world's largest radio telescope
Choose your local minisite

The image is a promotional banner for the Square Kilometre Array (SKA) telescope. It features the SKA logo on the left, which includes a stylized globe. The main text reads "SKA TELESCOPE SQUARE KILOMETRE ARRAY" and "Exploring the Universe with the world's largest radio telescope". Below this, it says "Choose your local minisite" and displays a row of flags representing the countries involved in the project: Australia, Canada, China, India, Italy, Netherlands, South Africa, Sweden, United Kingdom, France, Germany, Japan, Portugal, Spain, and Switzerland. The background of the banner is a blue sky over a horizon.

generate an exabyte a day of raw data,

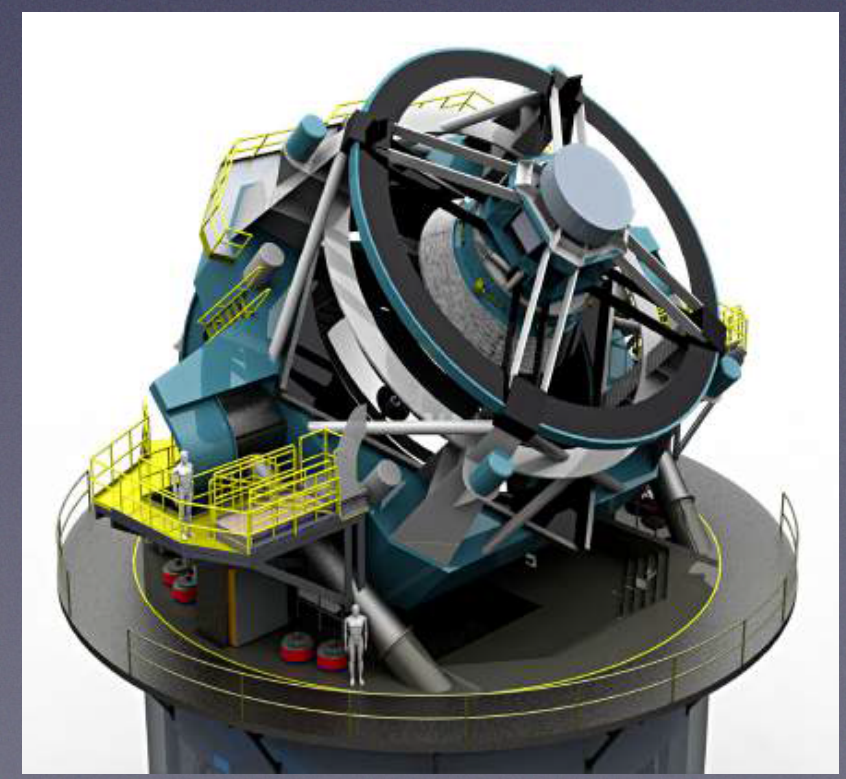
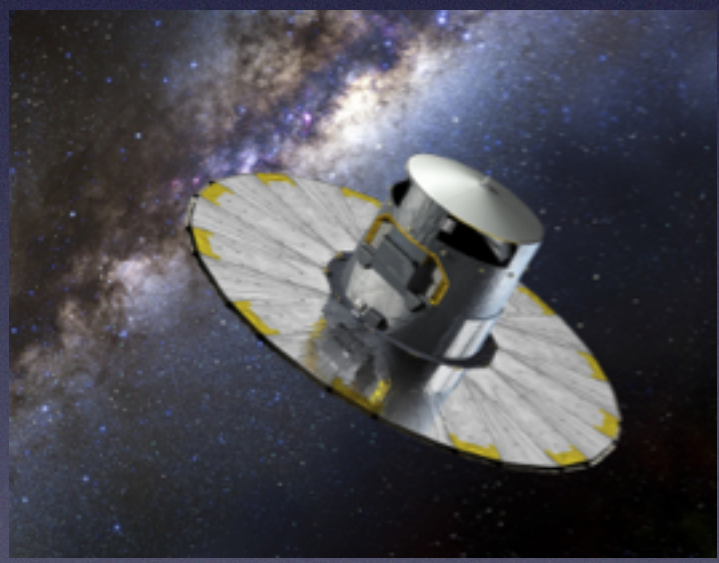


Rapprocher les partenaires astrophysiques et informatiques

Data Données Astrophysiques



MASTODONS
 AMADEUS
 PETASKY
 GAIA



Bureau interne
 S. Maabout, C. Surace
 E. Gangler
 N. Novelli
 P. Poncelet
 F. Toumani
 A. Hameurlain
 F. Genova
 D. Fraix-Burnet
 K. Zeitouni

Mise à disposition de données astrophysiques

Mise à disposition de requetes type

Favoriser les échanges d'experience et de methodes. Hadoop, Spark, SciDB, Vertica,

Data Mining en Astrophysique (sampling and algorithms for better selection)

Exploration des données, visualisations versus interrogation directe)

Programme Vendredi 23 Juin 2017

Introduction

10h00 : MAESTRO (présentation) Surace./Maabout

10h10 : Plateforme Galactica - Frédéric Gaudet

10h30 : Evolution of Data Management Systems for Big Data Applications - Abdelkader Hameurlain

Données Astrophysiques :

11:00 SKA : Chiara Ferrari

11h30 LSST : E. Gangler

12h00 Lunch

Machine Learning et Deep Learning

13h30 : Exploring the spectroscopic diversity of type Ia supernovae with DRACULA: a machine learning approach - Emille Ishida

13:45 : Classification of reliability for redshift measurements - Sara Jamal

14h00 : Clustering pour détection d'amas ouverts avec Gaia - Mario Morvan

14h15 : Galaxy morphology with CNNs using transfer learning - Alexandre Boucaud.

Organisations

14h30 BIGSKYEARTH (présentation) - E. Gangler/ K. Zeitouni

14h50 Cosmostatistics initiative : (<https://asaip.psu.edu/organizations/iaa/iaa-working-group-of-cosmostatistics>) - Emille Ishida

15h10 Wrap up, sondage, conclusions

16h00 fin du meeting

Astro Info

Ecole thématique 2018

Marseille

et

Statistics for Astronomy 2017 : <https://stat4astro2017.sciencesconf.org/>
Série ADA IX 2018(Astronomical Data Analysis) (<http://ada9.cosmostat.org/>)

programme

Module	Intervenants (nom et qualité)	Forme (cours, atelier, TD, TP...)
Données Astrophysiques	3 intervenants + 1 étudiant ou post-doc	Cours, TP, utilisation d'outils de visualisation de données, VO
Le Machine learning	3 intervenants + 1 étudiant ou postdoc	Machine learning, Deep Learning
Les plateformes	3 intervenants + 1 étudiant ou postdoc	OV, GALACTICA, LAM
Astro Hackathon	3 projets, 6 intervenants	Projets pour mettre en commun les connaissances

- Les journées « Cours » se dérouleront de la façon suivante : 1 heure d'initiation sur les concepts de base du cours, 1h30 d'interventions, sur le sujet et 3 heures de Travaux Pratiques.

Contexte international

- Astro statistics (<http://astrostatistics.psu.edu/>) Babu et al.
- Astro Informatics(<https://asaip.psu.edu/>) Longo et al.
- Cosmo Statistics (<https://asaip.psu.edu/organizations/iaa/iaa-working-group-cosmostatistics/>)
- <http://www.astro4dev.org/> pour l'Office of Astronomy for Development

