

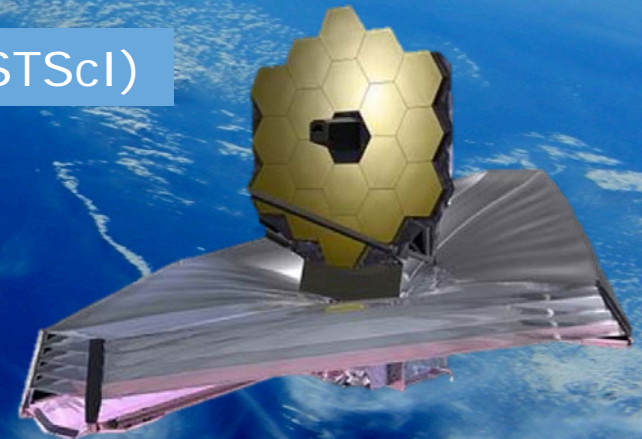
JWST is an international partnership between NASA, ESA and the CSA.



JWST – An ESA perspective

Pierre Ferruit (ESA) & Antonella Nota (ESA & STScI)

JSTUC meeting / STScI / 14-15 September 2017



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European Space Agency



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The European participation to JWST



JWST is a partnership between NASA, ESA and CSA.

- JWST is a high-priority endeavor for the combined astrophysical communities.
- ESA has been present since the very early phases of the mission, together with NASA and CSA.
- ESA was invited to join the project in 1997 at a time when the telescope was the “Next Generation Space Telescope” (NGST).
- The contribution of Europe to the mission was finalised in 2000.



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The European participation to JWST



The ESA contribution includes:

- The launch vehicle;
- The principal spectrograph (NIRSPEC);
- A joint contribution of a second instrument (MIRI);
- A team of 15 people in support of science operations at STScI.

In return for this contribution, “ESA shall obtain a portion of the observing time on JWST that will be no less than 15% of the observing time on average over the lifetime of the mission.”

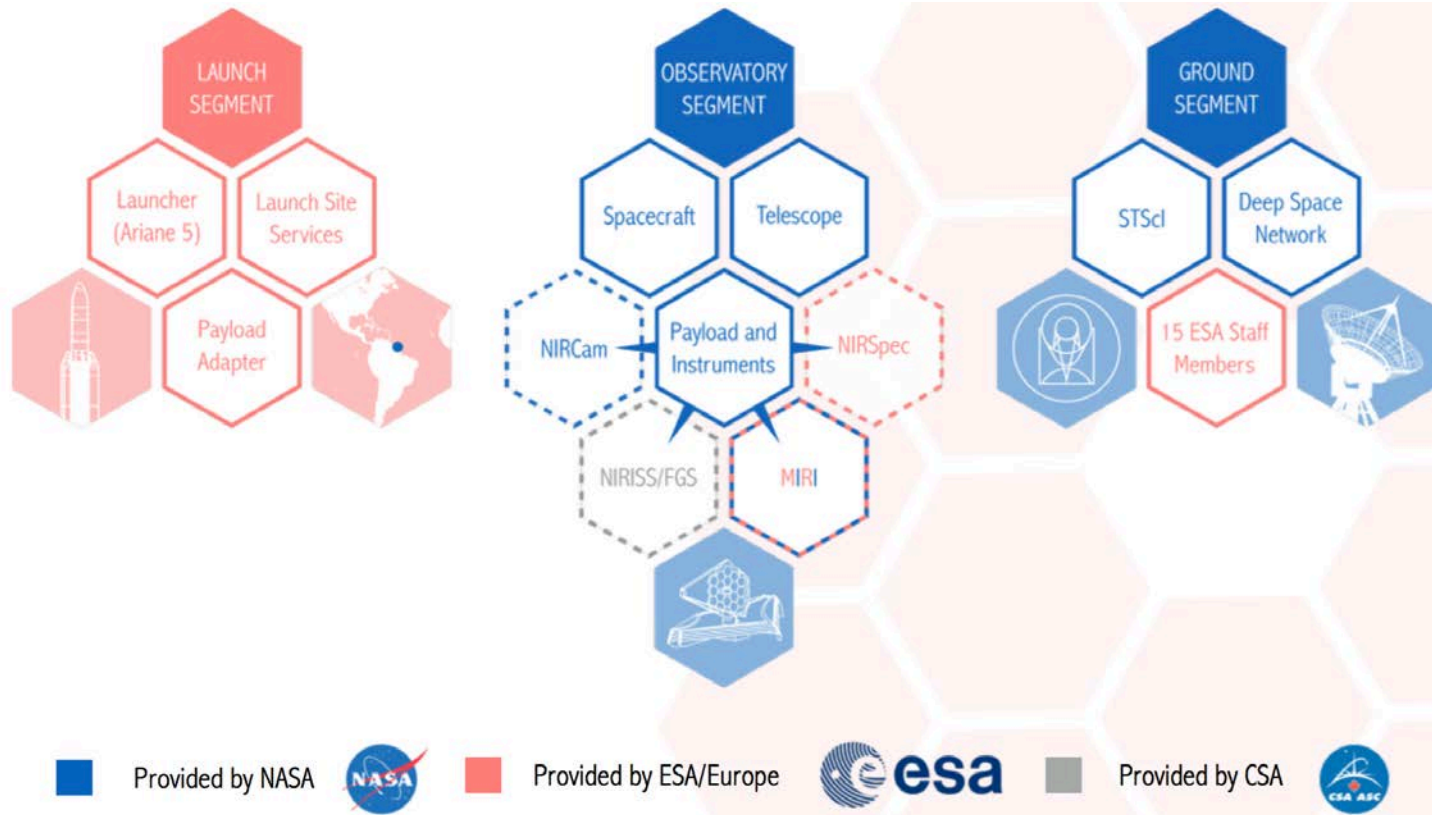
- *In very similar fashion to the model adopted for HST.*





just

The European participation to JWST



Important and visible participation involving ESA as well as European institutes and industry.

(Lützendorf, 2016)

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The European participation to JWST



Credit: Arianespace - ESA

JWST will be launched by an Ariane 5 ECA rocket from the spaceport of Kourou in French Guyana.

Between April 2003 and June 2017, Ariane 5 has flown 80 consecutive missions without failure. More than 60 of them were conducted with the ECA version.



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The European participation to JWST



NIRSpec was built by a consortium of European industrial companies for ESA with contributions from NASA.

Consortium led by Airbus Defence and Space.

The MIRI optical system was built by a consortium of nationally funded European institutes led by G. Wright.

Its detectors and MIRI's cryo-cooler system were provided by NASA JPL.





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NIRSpec - Near Infrared Spectrograph



MODES



Fixed Slits (FS):

→ Single sources, bright stars



Multi-Object Spectroscopy (MOS):

→ Rich fields, extended targets



Integral Field Spectroscopy (IFS):

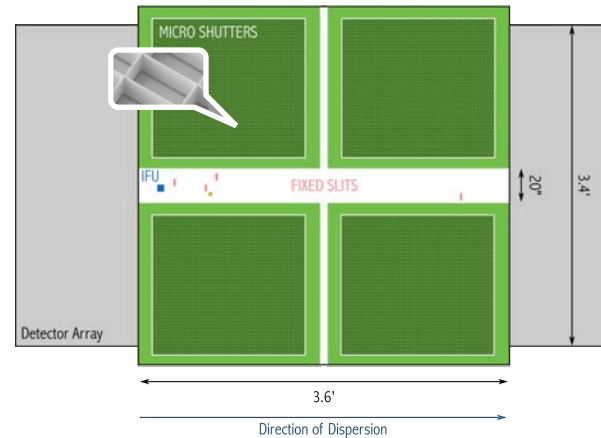
→ Sources with few arcsec extent



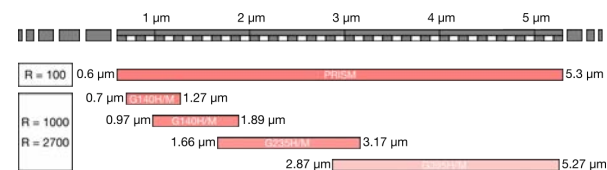
Bright Object Time Series (BOTS):

→ Exoplanets

FIELD OF VIEW



WAVELENGTH COVERAGE





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MIRI - Mid Infrared Instrument



MODES



Imaging:

→ Rich fields, extended targets



Coronagraphic Imaging:

→ Exoplanets



Low-resolution Spectroscopy (LRS):

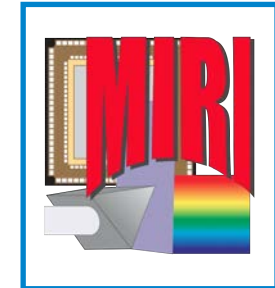
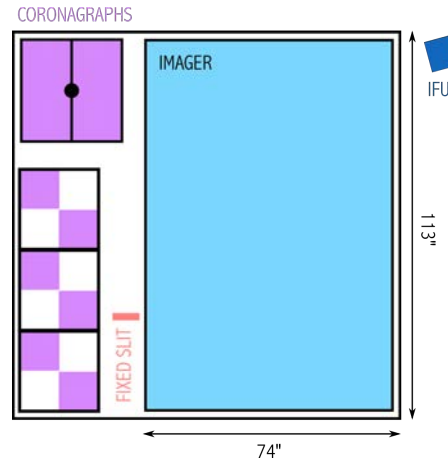
→ Sparse fields, single objects



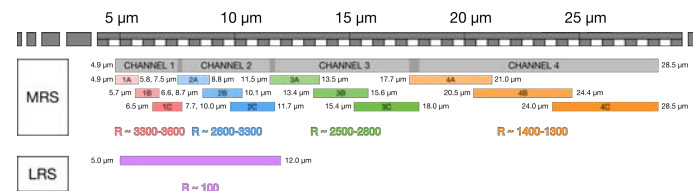
Medium-resolution Spectroscopy (MRS):

→ Sources with few arcsec extent

FIELD OF VIEW



WAVELENGTH COVERAGE

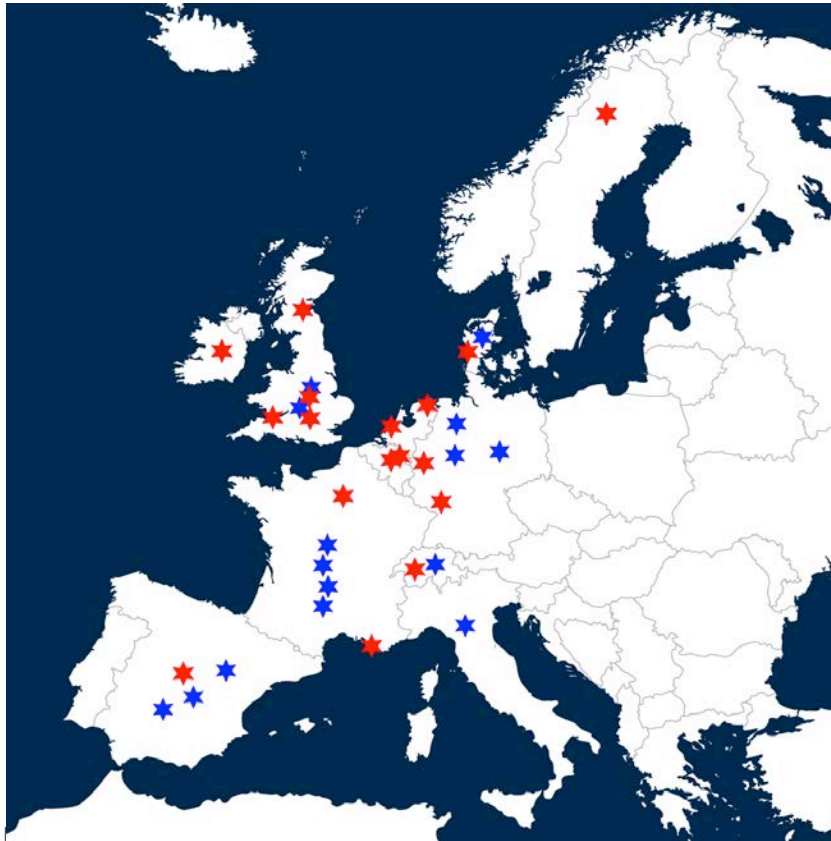






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The European participation to JWST



An endeavor which involved all of Europe.

Blue = NIRSpec
Red = MIRI

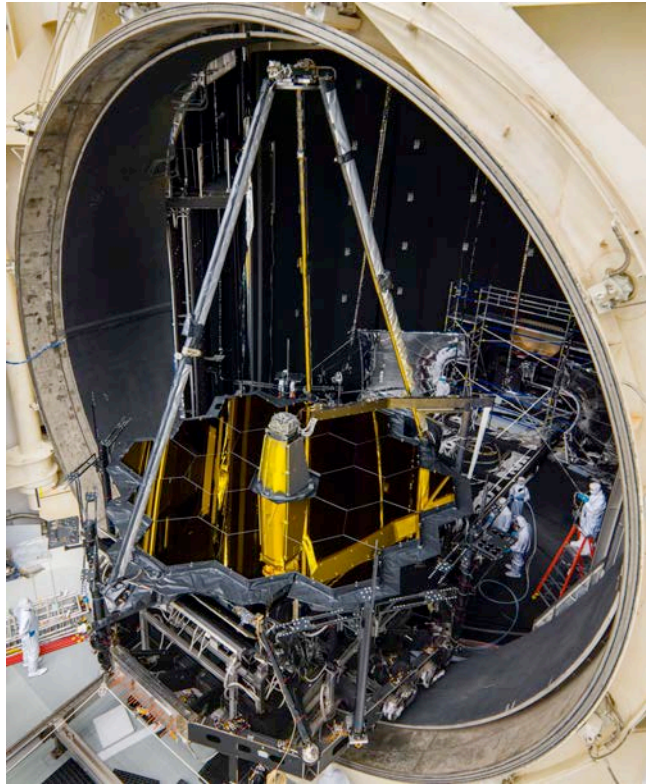
Credit G. Wright





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The European participation to JWST

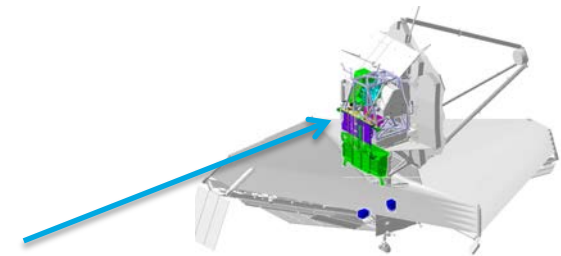


Status of MIRI and NIRSpec

NIRSpec and MIRI's optical system are already integrated on the back of the telescope in JWST's payload module called ISIM.

As we speak, the telescope and its instruments are being tested at cryogenic temperature in Houston. Both NIRSpec and MIRI are in good health and performing well.

ISIM



ESA UNCLASSIFIED - For Official Use Credit: NASA

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The European participation to JWST



A team of ESA scientists and engineers is also working alongside their US colleagues at STScI.

- The ESA scientific operation team is led by Marco Sirianni.
- The team will include a total of 15 scientists and engineers.
- The team will be fully staffed by the time JWST is launched.

Credit for the figure: Nora Lützgendorf





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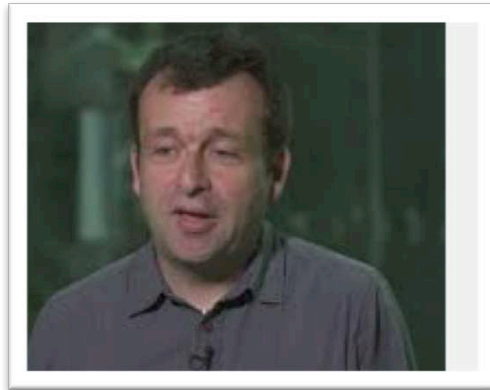
Meet the ESA/JWST team:



Project Science

Pierre Ferruit (Instruments, Commissioning, GTO Community)

Antonella Nota (Science Policies, GO Community)





Meet the ESA/JWST team:



The Project Team

Peter Jensen (Project Manager)

Peter Rumler (NIRSPEC Instrument Manager)

Anja Plitzke (Configuration Manager)

Raymond Fels (Project Controller).





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Meet the ESA/JWST team:



Science operations

Marco Sirianni (lead – JWST Development Manager)



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ESA JWST Science and Operations Team @ STSci




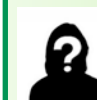
NIRSPEC

-  **Catarina Alves de Oliveira**
Instrument Scientist
-  **Stephan Birkmann**
Instrument Scientist
-  **Torsten Böker**
Instrument Scientist
-  **Nora Lützgendorf**
Instrument Scientist
-  **Elena Puga**
Instrument Scientist
-  **Tim Rawle**
Instrument Scientist
-  **Maurice Te Plate**
System Engineer

MIRI

-  **Macarena Garcia Marin**
Instrument Scientist
-  **Sarah Kendrew**
Instrument Scientist
-  **Brian O' Sullivan**
System Engineer
-  **TDB 2018**
Instrument Scientist
-  **TBD 2018**
Instrument Scientist

OTHER

-  **Anthony Marston**
Archive Scientist
-  **TBD 2018**
Public Outreach



**We look forward to working with you all
in this extraordinary adventure!**

