Northern Extended Millimeter Array (NOEMA)

Institut de RadioAstronomie Millimétrique (IRAM)
Grenoble, France

iram
Institut de Radioastronomie Millimétrique

cnrs
dépasser les frontières

MAX-PLANCK-GESELLSCHAFT

INSTITUTO GEOGRÁFICO NACIONAL
cnig

x12
NOEMA
project

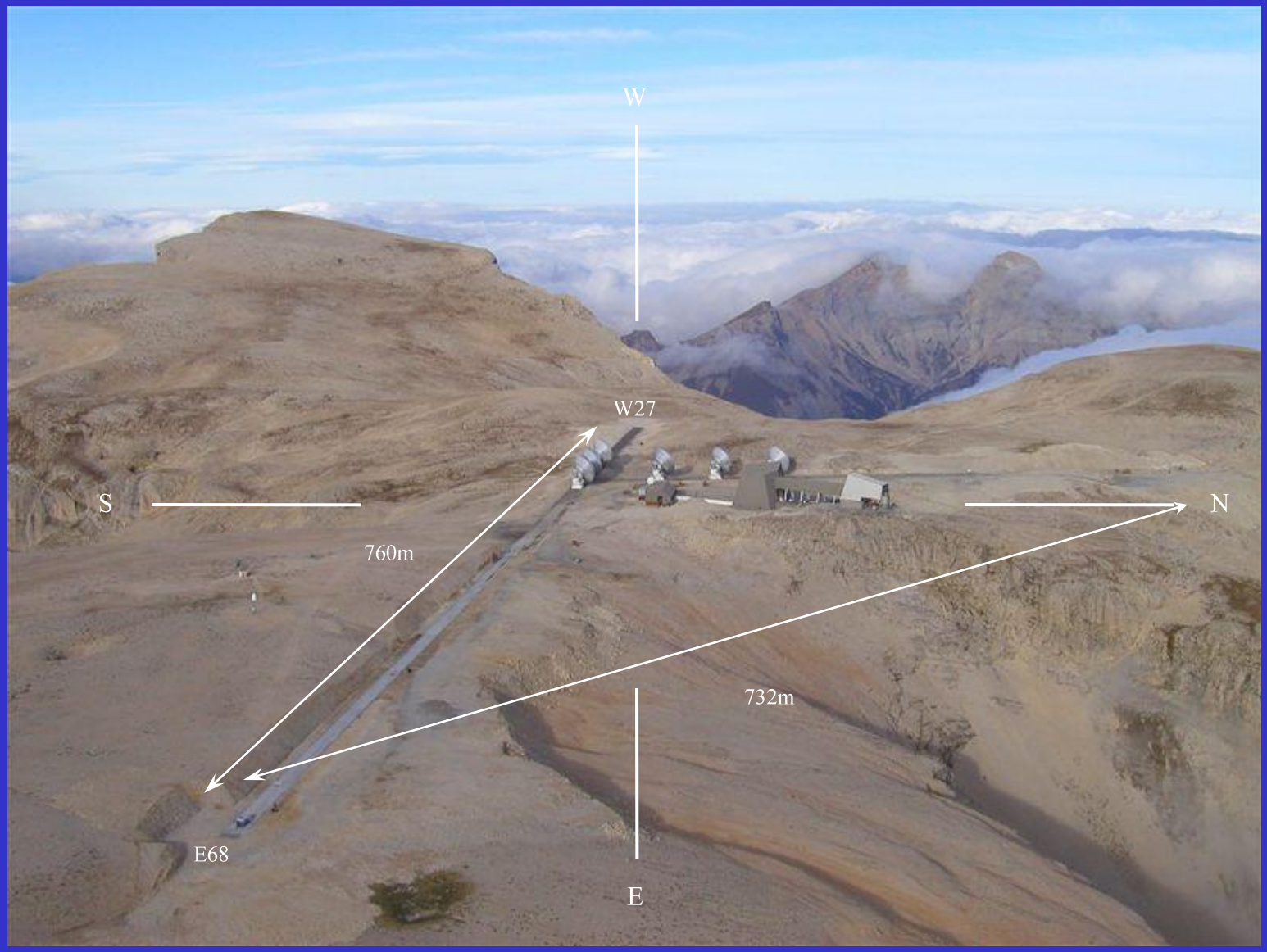
Plateau de Bure interferometer

(until February 2015)

- 6 antennas of 15m diameter at 2550m altitude in the French Alps
- Moveable on a railway system of 1230m
- Baselines up to 760m
- Bandwidth 3.6GHz in dual polarization
- 2MHz spectral resolution throughout the full bandwidth
- Up to 40kHz resolution in up to 8 spectral windows within 3.6GHz
- Receivers at 0.8mm, 1.3mm, 2mm, and 3mm
- Spatial resolution up to 0.2arcsec @ 350GHz

Plateau de Bure interferometer

(until February 2015)



Plateau de Bure interferometer => NOEMA

(March 2016)

NOEMA
(by end of 2019)

- 12 antennas
- Moveable on a railway system of 2000m
- Baselines up to 1600m
- 2SB receivers at (0.8mm), 1.3mm, 2mm, and 3mm
- Bandwidth 2 * 7.7 GHz in dual polarization (30.8 GHz)
- 2 MHz spectral resolution throughout the full bandwidth
- 62.5kHz spectral resolution in 16 chunks of 64 MHz (=1GHz) **per baseband** (x4)
- Spatial resolution up to 0.15arcsec @ 230GHz (0.1arcsec @350GHz)
- Dual band operation (e.g., 3mm & 1mm simultaneously) thanks to 2nd correlator

executive timeline

YEAR/QUARTER	ANT	MAX BASELINE	BAMD 1 GHz	BAND 2 GHz	BAND 3 GHz	BAND 4 GHz	1ST CORRELATOR	2ND CORRELATOR
Q2	7	800 m	80 - 116	130 – 178	202 - 274		2x 3.6 GHz	
Q3								
Q4								
2016 Q1								
Q2	8							
Q3			76 - 116					
Q4								
2017 Q1			**72 – 116**	**127-179**	**200 - 276**			
Q2	9						**2x 2x 7.7 GHz**	
Q3								
Q4								
2018 Q1	10							
Q2								**2x 2x 7.7 GHz**
Q3		**1600 m**						
Q4	11					275 - 373		
2019 Q1								
Q2								
Q3	**12**							

= 1.0" @ 100 GHz

as of June 2016

= 0.5" @ 100 GHz

PHASE II

= 62 GHz IN DUAL BAND OPERATION

NOEMA
(winter 2016)

Extended tuning range: 76GHz

Ori A/IRc2