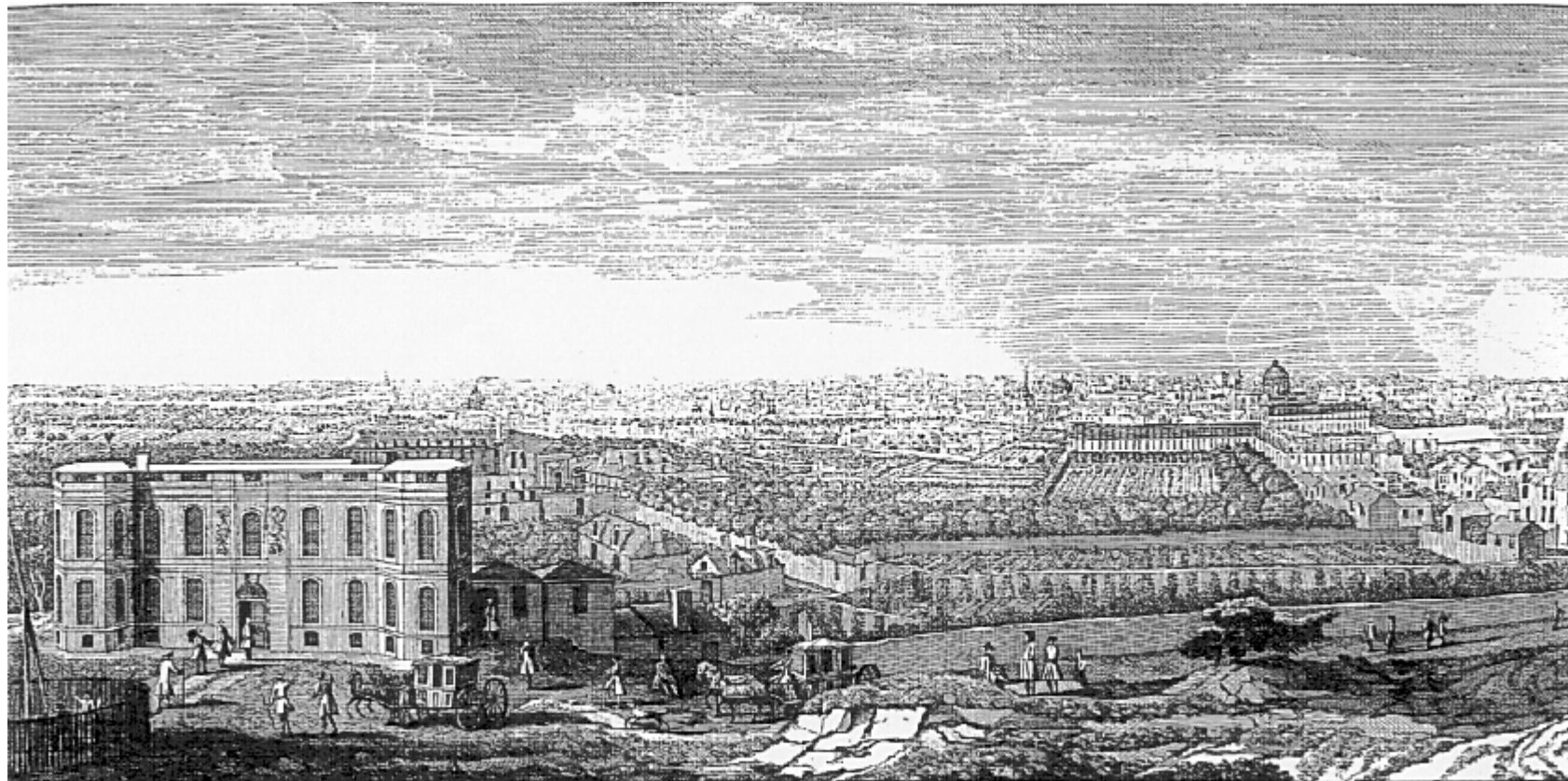


3rd ISMAR workshop

Observatoire de Paris
28-30 September 2015

**Paris Observatory built in the 1660s, outside Paris,
during the reign of Louis XIV ...**



del. par J. Boud.

VUE GÉNÉRALE DE LA VILLE DE PARIS
Prise de la hauteur de l'Observatoire.

à Paris chez Rigault rue St Jacques au dessus de celle des N

Not only for astronomical purposes...

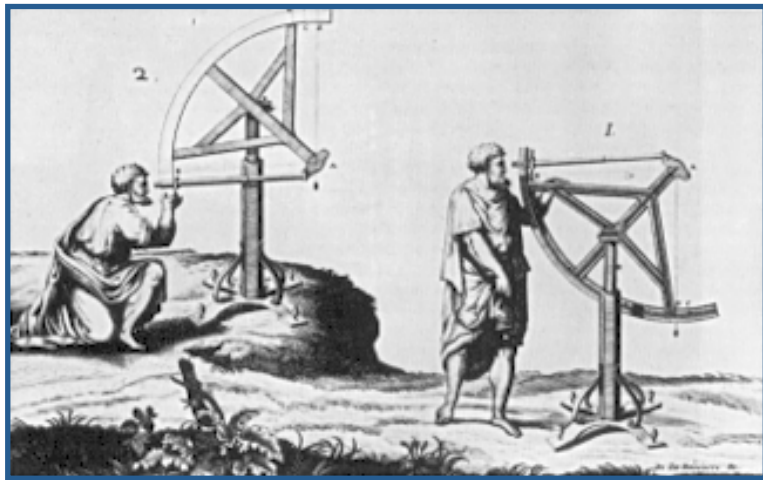
Geodesy

Key role of the Observatory in geodesy

The first meridian: the Paris meridian crosses the room next door

The official meridian... up to 1884...

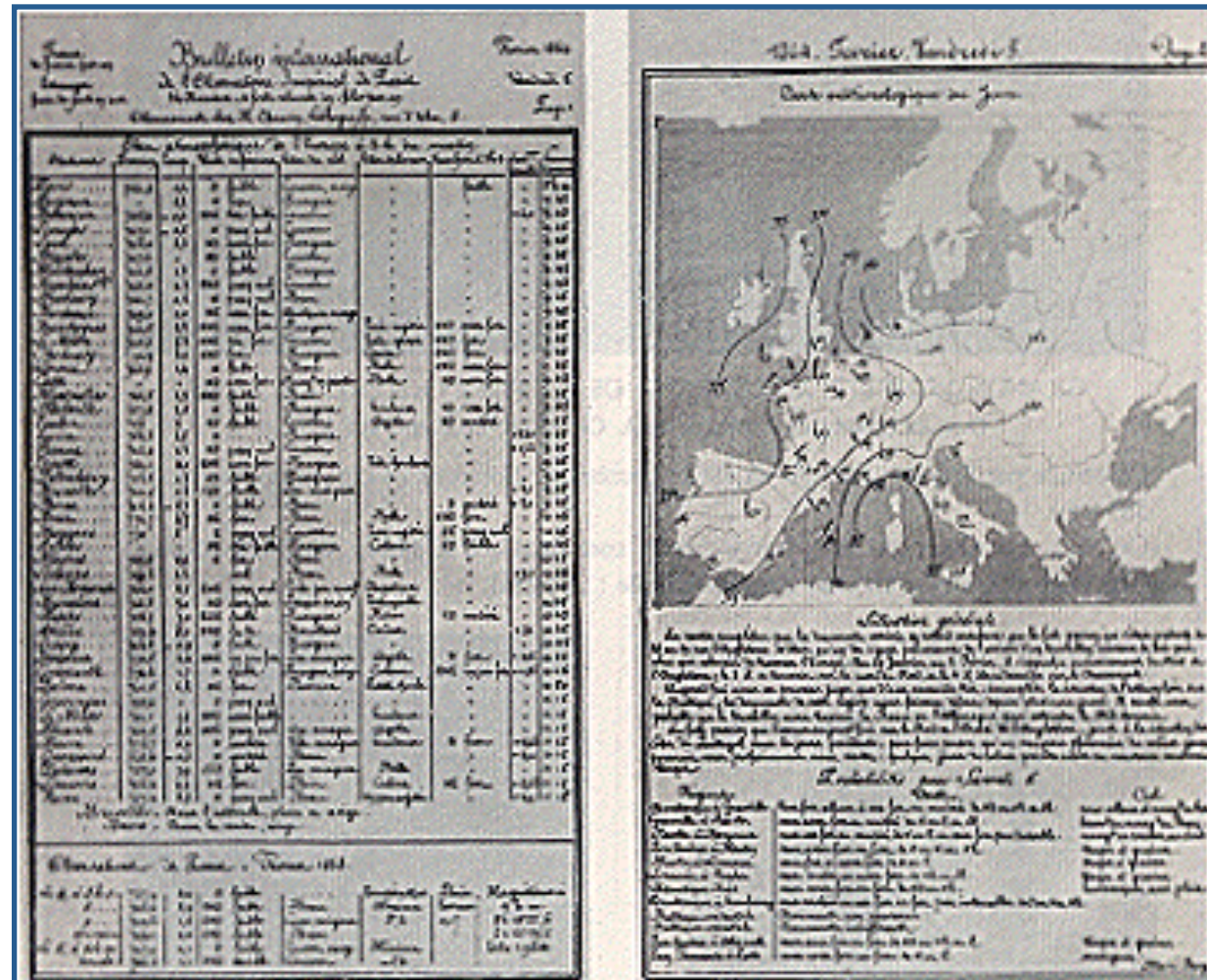
Used to calculate the meter ($1/40000000$ of the meridian)



Measurement of the Earth radius

Not only for astronomical purposes...

Meteorology

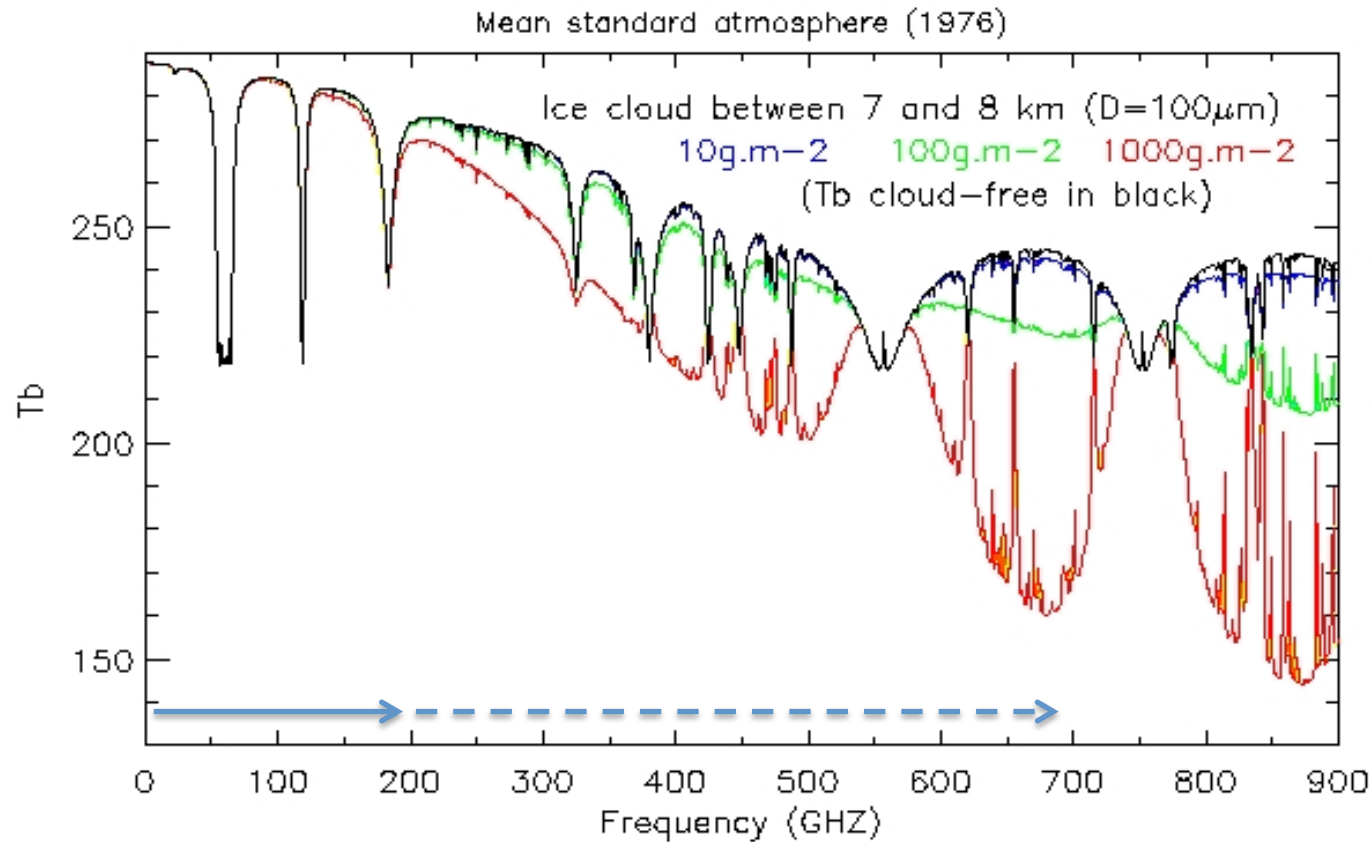


Le Bulletin International de l'Observatoire de Paris

Pressure, wind speed and direction, and prediction for the wind for the next day

Started in 1863 by Le Verrier

MetOp-SG to be equipped with a millimeter/sub-millimeter instrument for ice cloud characterization



The Ice Cloud Imager (ICI)

The first satellite instrument above 200 GHz for meteorological applications

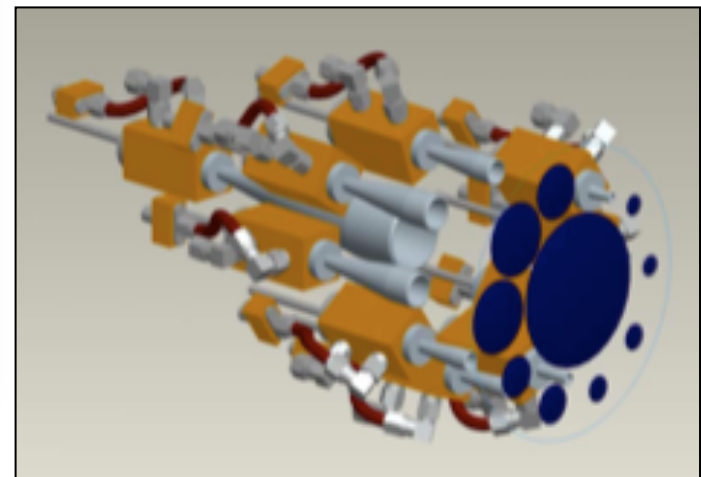
Ice Cloud Imager (ICI)

<i>Channel</i>	<i>Frequency (GHz)</i>	<i>Bandwidth (MHz)</i>	<i>NEΔT (K)</i>	<i>Polarisation</i>	<i>Footprint Size at 3dB (km)</i>
ICI-1	183.31 \pm 7.0	2x2000	0.7	V	15
ICI-2	183.31 \pm 3.4	2x1500	0.7	V	15
ICI-3	183.31 \pm 2.0	2x1500	0.7	V	15
ICI-4	243.2 \pm 2.5	2x3000	0.6	V, H	15
ICI-5	325.15 \pm 9.5	2x3000	1.1	V	15
ICI-6	325.15 \pm 3.5	2x2400	1.2	V	15
ICI-7	325.15 \pm 1.5	2x1600	1.4	V	15
ICI-8	448 \pm 7.2	2x3000	1.3	V	15
ICI-9	448 \pm 3.0	2x2000	1.5	V	15
ICI-10	448 \pm 1.4	2x1200	1.9	V	15
ICI-11	664 \pm 4.2	2x5000	1.5	V, H	15

On MetOp-SG satellite B, with the MicroWave Imager (MWI)

The International Sub-Millimeter Airborne Radiometer

- A demonstrator supported by ESA and UKMO
- 243 (H+V), 325 (V), 448 (V), 664 (V+H)
- Along track, -10° to $+55^{\circ}$, downward and upward
- On the UK MO FAAM



Two campaigns to be discussed during this workshop

Campaign	Location	Date
STICCS-2 (Sub-millimeter Trial in Cirrus and Clear Skies)	Out of Prestwick, Scotland	26/11/2014-15/12/2014
COSMICS (Cold-air Outbreak and Sub-Millimeter Ice cloud Study)	Out of Prestwick, Scotland	04/03/2015-25/03/2015

Objectives of the workshop

- Update on the ISMAR instrument status and measurement campaigns
- Thorough analysis of the ISMAR data collected during the STICCS and COSMICS campaigns
- Discussion on the future ISMAR campaigns and on possible collaboration with other international measurement campaigns
- Way forward for the preparation of ICI, using the ISMAR potential

28/09 Monday afternoon

(Moderator: C. Lee)

13:30 Coffee

14:00 Goal of the workshop (C. Prigent & E. Defer, LERMA)

14:15 Current status of ISMAR (C. Harlow, UK MO)

14:45 Up-coming campaigns with ISMAR (C. Harlow, UK MO)

15:15 Guest presentations (30 mn each, including discussion)

- RASTA, an airborne tool for cloud studies, J. Delanoë, LATMOS
- (Ice-)clouds, circulation and climate sensitivity, S. Bony, LMD
- HALO status and planned campaigns, S. Crewell, Univ. Koeln
- 94 GHz Doppler wind radar campaigns, C.-C. Lin, ESA

17:30 Tour of Paris Observatory

18:30 Ice breaker

29/09 Tuesday morning

(Moderator: S. Crewell)

09:30 Overview of the STICCS and COSMICS campaigns (S. Fox, UK MO)

10:00 Quality of the ISMAR data collected during the STICCS & COSMICS campaigns (S. Fox, UK MO)

10:30 Auxiliary data (S. Fox, UK MO)

11:00 Coffee

11:20 Description of the analysis activities performed in each group on ISMAR data (20 mn each maximum, including discussion)

- Clear-sky verification and single scattering calculations (P. Eriksson, Chalmers)
- Clear-sky verification, noise evaluation, emissivity calculations (D. Wang, LERMA)
- Microwave and infra-red surface properties from the Greenland flights (C. Harlow, UK MO)
- Training database and NN retrieval (M. Brath, Hamburg)
- Jacobians and preliminary OEM information content (V. Gruetzun, Hamburg)

13:00 Lunch

29/09 Tuesday afternoon

(Moderator: S. Buehler)

14:00 Radiative transfert simulations relevant for ISMAR

(20 mn each, including discussion)

- ARTS and ISMAR (P. Eriksson, Chalmers)
- RTTOV (C. Harlow, UK Met Office)
- ATM (J. Pardo, CSIC)
- DDA calculations (R. Ekelund, Chalmers)

15:20 Coffee

15:50 Discussion on the ISMAR flights (all)

- B893 flight
- B895 flight
- B896 & B898 flights
- Other interesting ISMAR flights

Dinner at Bal Bullier (<http://www.cafebullier.com/>) around 19:00

30/09 Wednesday morning

(Moderator: P. Eriksson)

- 09:00 ISMAR activities in preparation to ICI
(instrumentation, analysis / radiative transfer tools) (all)
- 10:00 Discussions and way forward (all)
- 11:00 Coffee
- 11:30 Review of actions (all)