

## Welcome to Trieste !

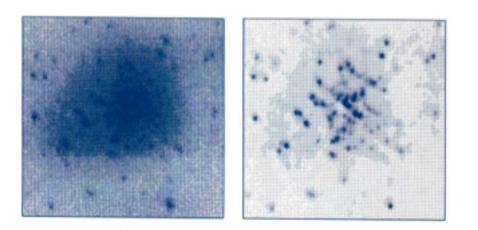






#### ASTRONOMICAL DATA ANALYSIS SOFTWARE AND SYSTEMS I

# 25 years ago ...



Edited by Diana M. Worrall, Chris Biemesderfer and Jeannette Barnes



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#### COBE DIFFERENTIAL MICROWAVE RADIOMETER (DMR) DATA PROCESSING TECHNIQUES

P.D. JACKSON, G.F. SMOOT<sup>2</sup>, C.L. BENNETT<sup>3</sup>, J. AYMON<sup>2</sup>, C. BACKUS<sup>1</sup>, G. DE AMICI<sup>2</sup>, G. HINSHAW<sup>4</sup>, P. B. KEEGSTRA<sup>1</sup>, A. KOGUT<sup>4</sup>, C. LINEWEAVER<sup>2</sup>, L.A. ROKKE<sup>1</sup>, AND L. TENORIO<sup>2</sup>

<u>ABSTRACT</u> The Differential Microwave Radiometers (DMR) experiment measures temperature differences in the microwave sky at frequencies of 31.5, 53, and 90 GHz. We discuss the software system used to calibrate and invert these difference measurements to produce full-sky maps of the large-scale distribution of the cosmic microwave background. Tests indicate that any spurious features introduced by the data processing are negligible compared to the instrument noise.

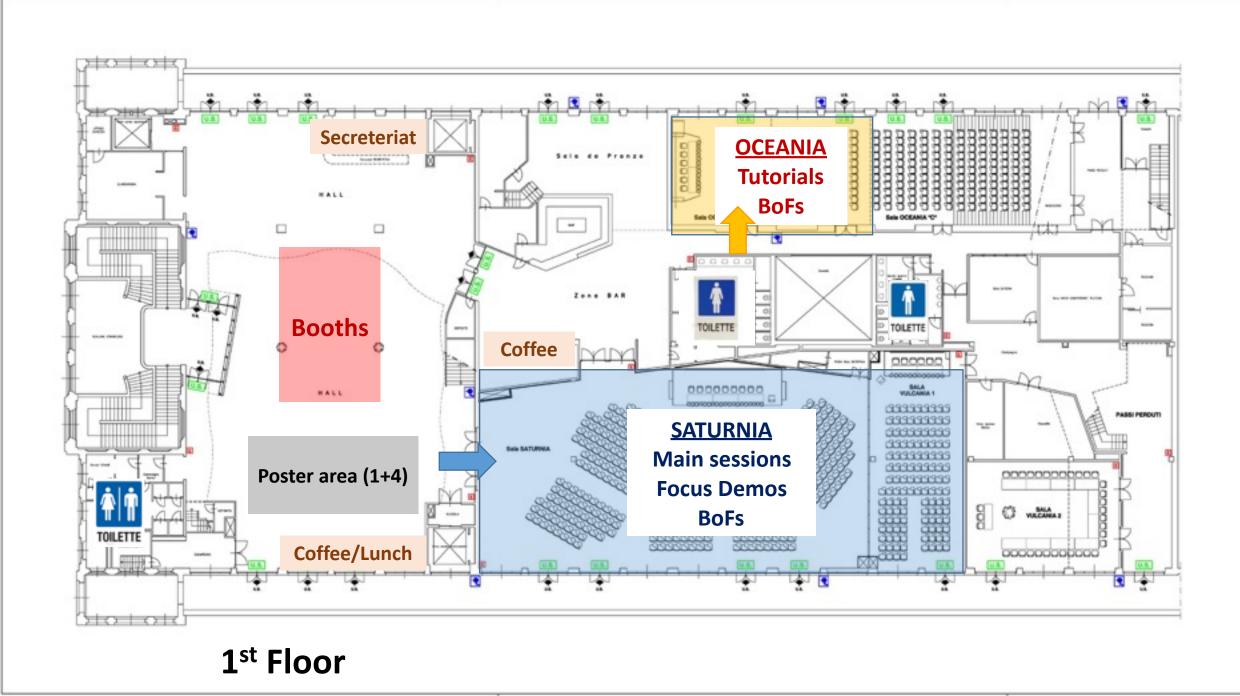
### George F. Smoot, Nobel Laureate 2006

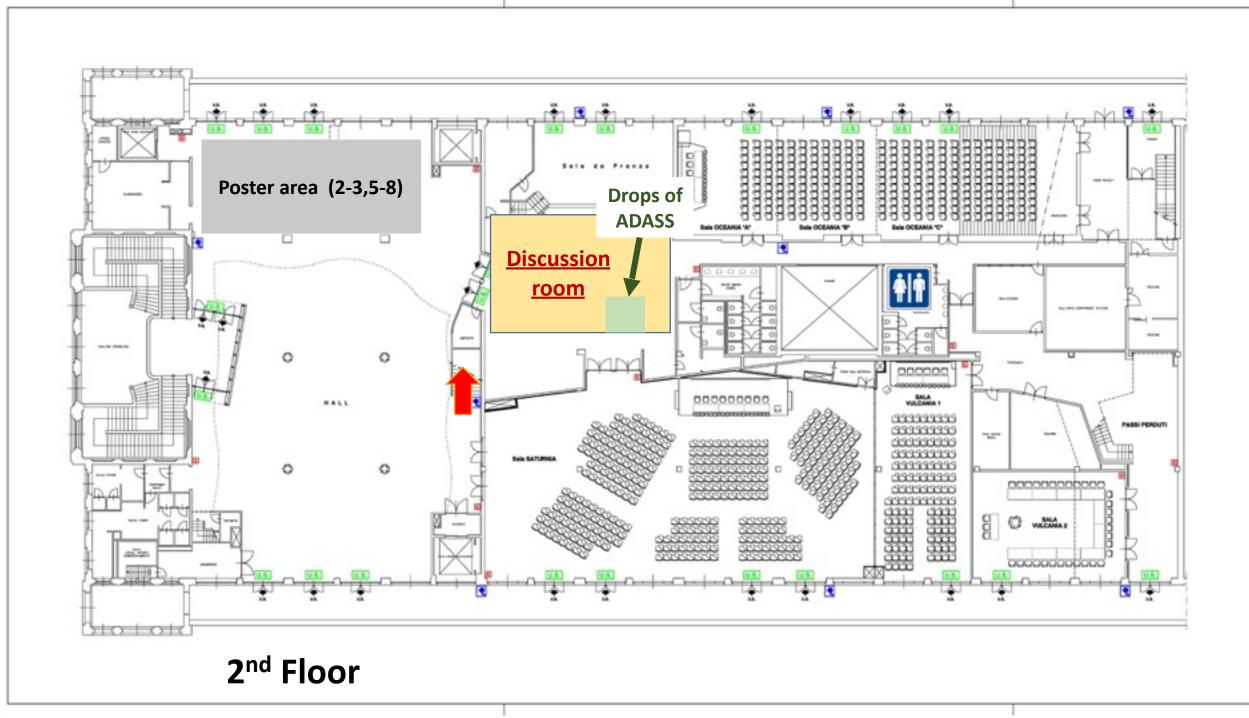
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### DAILY QUALITY ASSURANCE SOFTWARE FOR A SATELLITE RADIOMETER SYSTEM

P.B. KEEGSTRA, G.F. SMOOT<sup>2</sup>, O.L. BENNETT<sup>3</sup>, J. AYMON<sup>2</sup>, C. BACKUS<sup>1</sup>, G. D.S. AMICI<sup>2</sup>, C. MNSHAW<sup>4</sup>, P.D. JACKSON<sup>1</sup>, A. KOGUT<sup>4</sup>, C. LINEWEAVER<sup>2</sup>, L.A. ROKKE<sup>1</sup>, J. SANTANA<sup>1</sup>, AND L. TENORIO<sup>1</sup>

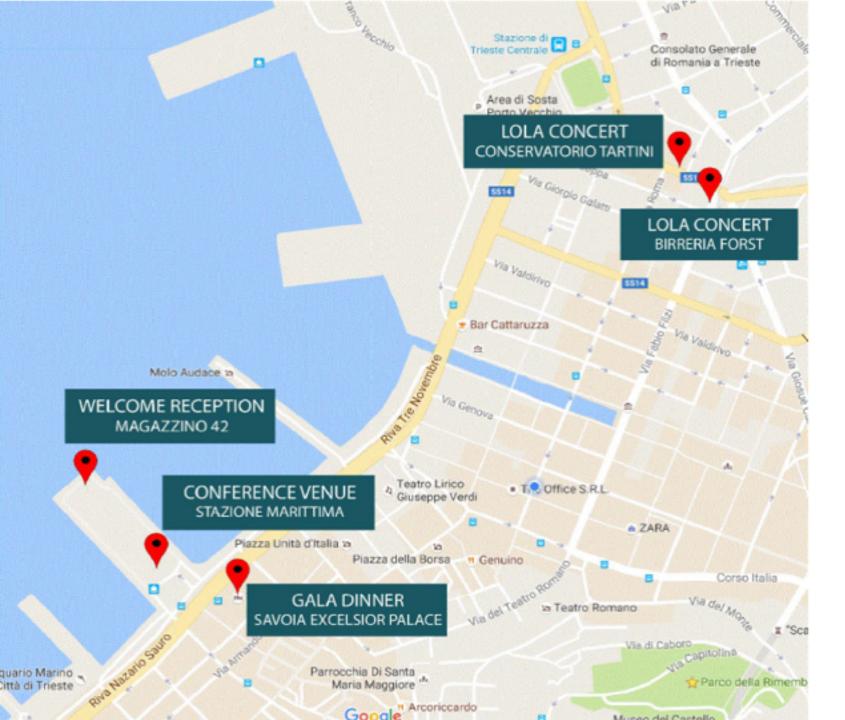
<u>ABSTRACT</u> Six Differential Microwave Radiometers (DMR) on the *COBE* (Cosmic Background Explorer) measure the large-angular-scale isotropy of the cosmic microwave background (CMB) at 31.5, 53, and 90 GHz. In addition to basic plotting and limit-checking, we implement a collection of more specialized programs to perform data quality assurance and long-term trending. Quality assurance of DMR data poses challenging requirements. The data are differential, so a single bad point can affect a large region of the sky, yet lengthy integration times (> 1 year) are required to limit potential CMB anisotropies.







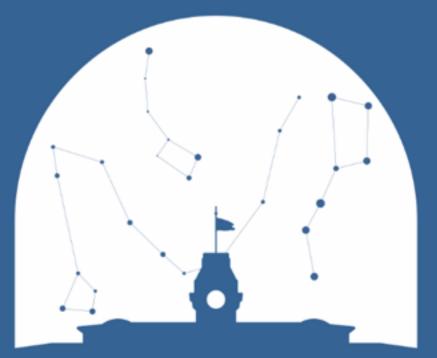
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Gala dinner: Monday, 20:00

LoLa Concert: Tuesday, 19:00 and 20:30 + reception

ADASS XXVI Jogging: every day, 7:00



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