National reports from Central and South America

Argentina

Observations by the National Weather Service (SMN)

- Total ozone at 4 locations, one of these in Antarctica
- Profile ozone (sondes) from 2 locations. A new ozonesonde observation programme was started in April 2008 in Ushuaia
- Surface ozone at 4 locations
- Broadband surface UV irradiance at 9 locations
- In collaboration with FMI, INTA, NOAA, Spanish Met Agency, WMO

Observations by the Argentine Antarctic Institute

- Total ozone at 3 locations
- Ozonesondes at 2 locations
- Surface UV at 1 location
- In collaboration with FMI, INTA, SMN, Univ. of Rome, Univ. of Quebec, WMO

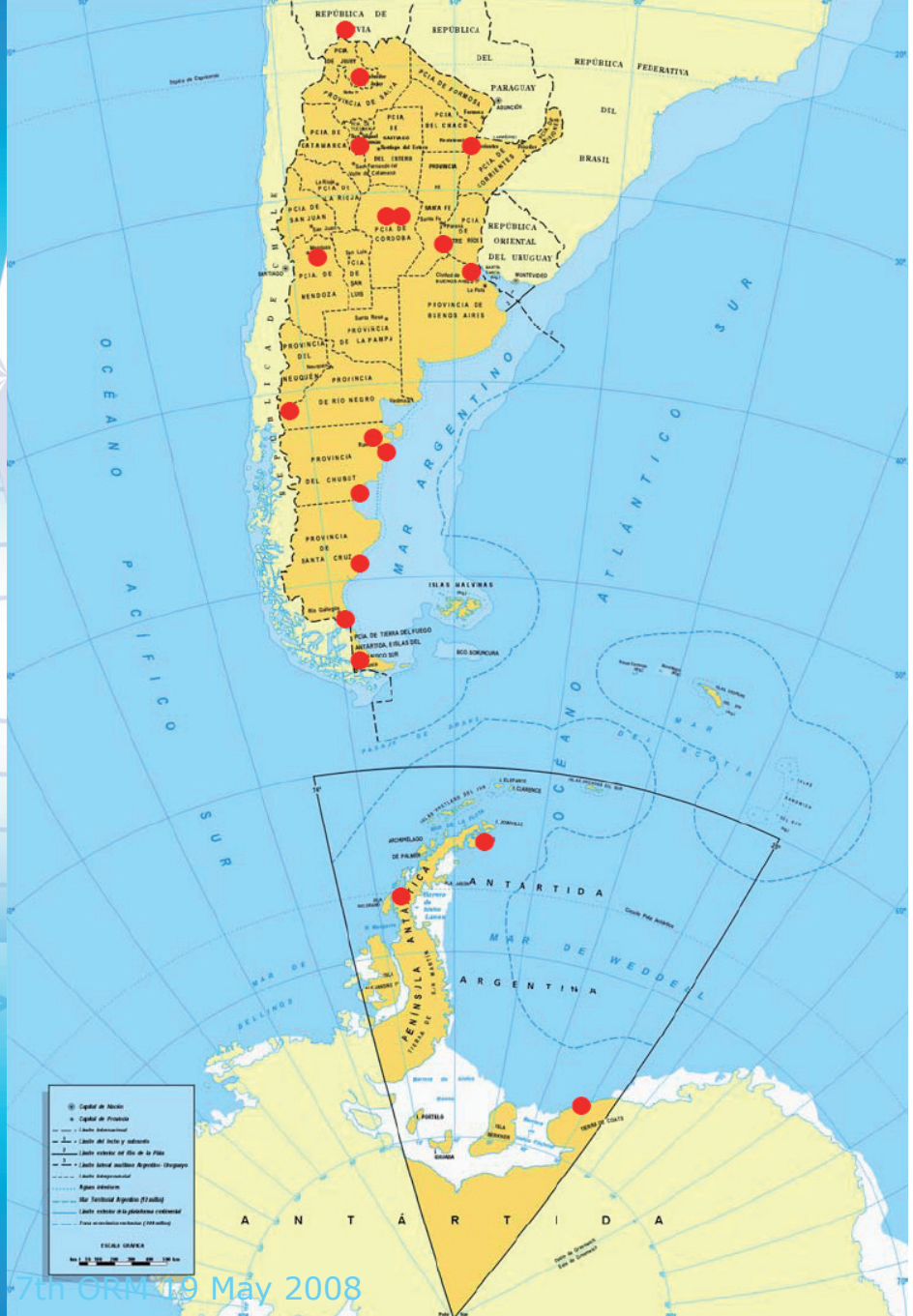
Observations by Austral Center for Scientific Research (CADIC) - Tierra del Fuego

- Brewer total ozone
- Spectral solar irradiance (SUV-100)
- UV-Vis DOAS total ozone and NO_2
- Narrowband UV and PAR with GUV-511
- Narrowband UV and PAR with NILU-UV

Observation by Center for Laser Research and its Applications (CITEFA-CONICET) - Buenos Aires

- UV-A and UV-B measurements at Villa Martelli and Río Gallegos
- Tropospheric aerosol and water vapour lidar at Villa Martelli
- Stratospheric ozone lidar at Río Gallegos
- SAOZ total ozone and NO_2

Radiation measurements at several sites carried out by various institutions



Argentine sites where ozone and UV are measured

Dobson intercomparison in Buenos Aires, Nov-Dec 2006

- Collaboration between SMN, NOAA and WMO
- SMN hosts the Regional Dobson Calibration Centre for South America
- Instruments from Cuba, Mexico, Peru, Brazil and Argentina took part
- UV biometers were also calibrated in collaboration with the World Radiation Centre in Davos

Bob Evans, NOAA

Theory and Modelling activities

- Programme for Studies of Atmospheric Processes and Global Change (PEPACG) at the Catholic Univ. of Argentina. Canziani et al. Atmospheric dynamics and climatology.
- Instituto de Fisica de Rosario. Luccini et al. UV climatology.
- Austral Center for Scientific Research (CADIC) - Tierra del Fuego. Diaz et al. Ozone and UV climatology.

Dissemination of results

- Total ozone and ozonesonde data are submitted regularly to WOUDC.
- The SMN provides daily national UV Index forecast maps for clear and cloudy conditions both in its webpage as well as to the media.
- During the ozone hole season SMN, CADIC and PEPACG send frequent reports to the media describing the ozone hole evolution, using satellite retrievals and meteorological information.

Needs and recommendations

Lack of adequate funding to maintain these activties over time

SMN undergoes major restructuring and needs some support for this

- New monitoring strategy
- Replacement of obsolete equipment and facilities
- New activities are necessaries, including long-term monitoring of both ozone and UV

It is important to promote and maintain all atmospheric measurements that are related to ozone layer and climate change.

- Research activities on ozone depletion must be enhanced in the framework of climate change, as many joint aspects and couplings are now starting to be known.

Help to sustain national and international projects

Brazil

Sites where ozone and UV are measured

Dissemination of results

- Total ozone and ozonesonde data submitted to WOUDC
- UV data for the public is on the web:
  http://www.dge.inpe.br/ozonio

Needs and recommendations

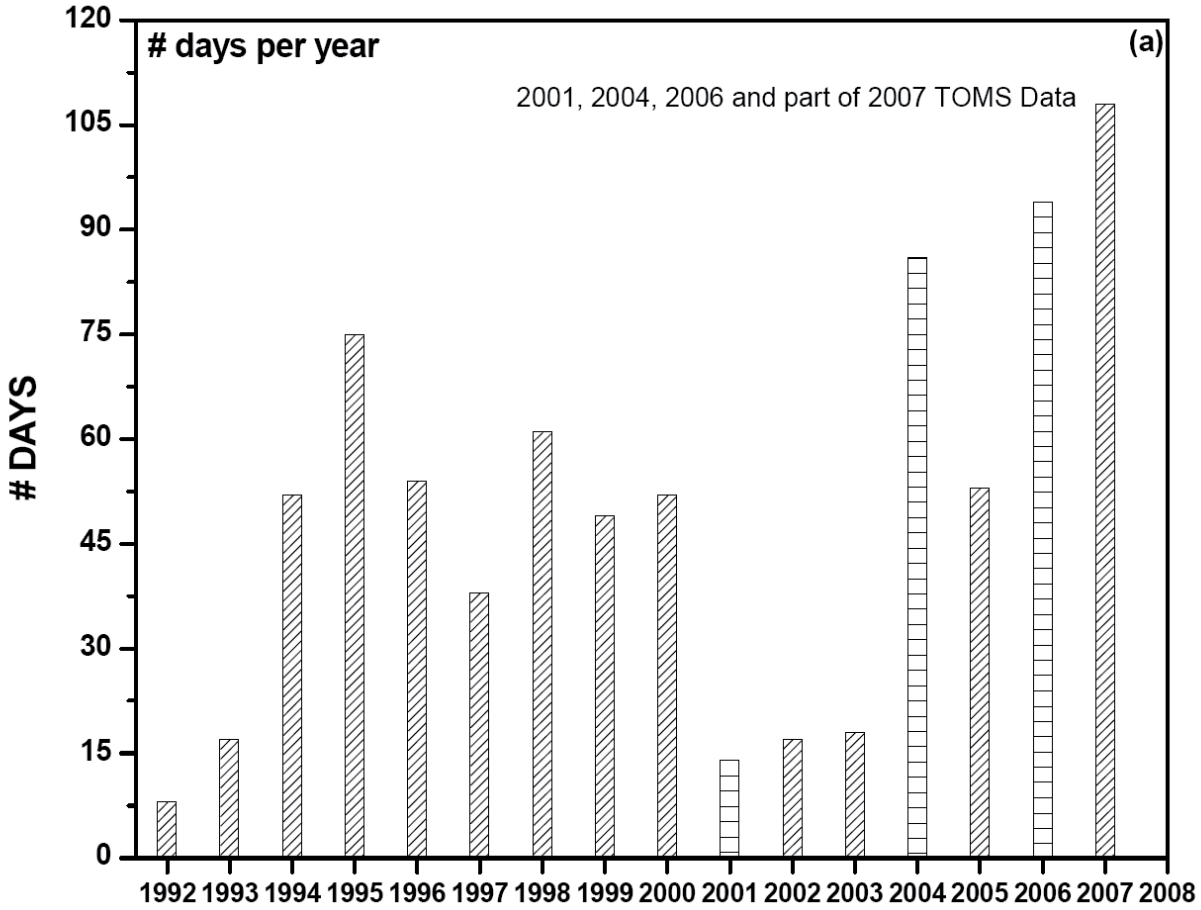
- **Annual maintenance and calibration of Brewers is of prime importance.**
- **Financial support for participation in ozone and UV conferences and workshops.**

Chile

- **S**everal institutions are engaged in ozone and UV observations
  - Emphasis on the study of changes in UV radiation
- **B**rewer total ozone at Punta Arenas
- **U**mkehr profiling at Punta Arenas
- **O**zonesondes from Easter Island
- **U**niversities and the National Meteorological Service run a number of UV radiation measurement sites from 13°S to 63°S, taking advantage of the impressive latitude range of Chile + Antarctic Peninsula

Punta Arenas

Number of days with total ozone 2σ below the climatological (1978-1987) monthly mean



Needs and recommendations

- **O**zonesonde programme in Punta Arenas is currently supported by JICA (Japanese International Cooperation Agency). For the next years there is no support. Any assistance is welcome.

- **A** fire at the National Met. Service in Valdivia led to the loss of several instruments, among others, an SUV-100 spectroradiometer. Any help is welcome.

- **E**xpand the Chilean ozone/UV network with Brewers in northern and central regions.

- **T**he successful calibration exercises in Punta Arenas should be repeated and expanded to include more instruments.

Costa Rica

Weekly ozonesondes launched from Alajuela.

- This is part of SHADOZ
- Collaboration with CIRES-Univ. of Colorado, NOAA and NASA

Monthly/bi-weekly water vapour profiles of water vapour with frost-point hygrometer sondes

- Collaboration with CIRES-Univ. of Colorado, NOAA and NASA

UV measurements

- Broadband UV at Heredia
- Narrowband filter measurements with a Davis weather station. Three years of data but not yet analysed.

Needs and recommendations

- **C**omputers and software for surface ozone, profile ozone and water vapour data
- **S**upport for travel to conferences and workshops
- **A** UV network should be established