



UAMPY: a contribution to the ICESTAR/IHY activities for the International Polar Year 2007-2008

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UAMPY (Upper Atmosphere Monitoring for Polar Year 2007-2008) was an Expression of Intent submitted on January 14, 2005 to the IPY joint Committee. After a positive and encouraging outcome of the IPY evaluation and the incorporation of idea 95 (“Multi-instrument observation of the high latitude ionosphere”, proposed by Pierre J. Cilliers), UAMPY is now part of the IPY core project: “ICESTAR/IHY”, which was endorsed by the IPY joint committee in November 2005. UAMPY would be an example of the necessary international cooperation to develop a polar upper atmosphere observation network on both the hemispheres. The UAMPY team could allow unprecedented observation of the polar ionosphere, with extended auroral and polar coverage, making possible the mapping of ionospheric features from mid- through polar latitudes and studies of associated polar ionospheric processes. The project includes a unique ability to monitor polar scintillation globally, providing the opportunity to study the ionospheric irregularities causing degradation on HF Radio Communications and trans-ionospheric signals. Scintillation is a significant concern for trans-polar navigation and communication. The potential exists for numerous new studies - both scientific and practical investigations. UAMPY is actually proposed by: INGV (Istituto Nazionale di Geofisica e Vulcanologia - Rome, ITALY), IFAC/ISC-CNR (Istituto di Fisica Applicata “Nello Carrara”/Istituto dei Sistemi Complessi, Florence, ITALY), UNIVERSITY OF BATH (UK), SRC-PAS (Space Research Center, Polish Academy of Sciences Warsaw, POLAND), UNIVERSITY OF CALGARY (CANADA), HMO (Hermanus Magnetic Observatory, Hermanus, SOUTH AFRICA) together with other participants from South African including ISSA (Institute for

Satellite and Software Applications), HartRAO (Hartebeesthoek Radio Astronomy Observatory), NWU(Northwest University), UKZN (University of KwaZulu-Natal in Durban), UP (Department of Electrical, Electronic and Computer Engineering, University of Pretoria), CDSM(Chief Directorate Surveys and Mapping, South Africa), and UCT(Department of Electrical Engineering, University of Cape Town). These groups manage several experimental observations in the Arctic and in Antarctica, including the following: GPS scintillations receivers at Ny Alesund (Svalbard, Norway), at the Italian Station “Mario Zucchelli” (Terra Nova Bay, Antarctica) and at the EISCAT sites in Tromso, Kiruna and Sodankyla; ionosonde, scintillation receivers and magnetometer at the Polish Polar Station in Hornsund (Svalbard); the Canadian GPS Network for Ionosphere Monitoring (CANGIM); riometers and a digital ionosonde AIS-INGV (Advanced Ionospheric Sounder INGV) in Antarctica at the Italian Station “Mario Zucchelli”; magnetometer, riometer, GPS dual frequency receivers and HF Radar (part of the SuperDARN network) at the South Africa observatory at SANAE IV in Antarctica. A general overview of the UAMPY activities possibly contributing to the ICESTAR/IHY work plan for IPY, recent achievements and recent updates on the UAMPY team will be presented and described.