



INTERNATIONAL ICE CHARTING WORKING GROUP (IICWG)

May 16, 2011

Dr. Charles F. Bolden, Jr.
Administrator
National Aeronautics and Space Administration
Washington, DC 20546-0001

Dr. Jane Lubchenco
Administrator
National Oceanic and Atmospheric Administration
1335 East-West Highway
Silver Spring, MD 20910

Dear Drs. Bolden and Lubchenco;

Re: Continued Access to Ku-Band Scatterometer Data for Ice Monitoring

We are writing as co-chairs of the International Ice Charting Working Group (IICWG) to congratulate you on your successful efforts to provide Ku-band scatterometer data to the operational ice monitoring community for the past decade and to impress upon you the need for this to continue into the future.

The IICWG is a working group of national ice services, including those from Canada, Denmark (Greenland), Finland, Germany, Iceland, Norway, Russia, Sweden and the United States, as well as the International Ice Patrol. The participants are the agencies responsible for the provision of charts and information about sea ice and icebergs to support marine navigation. The products and services provided by IICWG members are recognized by governments and marine users as being critical to safe, efficient and environmentally-sound marine operations in ice-affected waters. Given the importance of satellite observations for ice monitoring, active engagement with space agencies and data providers has been a key agenda item for the IICWG.

A decadal dataset of Arctic sea ice maps has been produced from daily, accurate and stable Ku-band observations from QuikSCAT since 1999. While the non-scanning mode of the scatterometer could still be useful, we understand the trade-offs you must make in deciding whether to continue or to terminate its operation. The agreement you have reached with the



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Indian Space Agency to make near-real-time, routine access to Oceansat-2 scatterometer (OSCAT) Level-1B data (needed to derive sea ice products) through EUMETSAT has given the ice community an effective replacement. We applaud your initiative in this endeavor.

The Arctic sea ice cover has drastically reduced in the past decade. The record low of total ice extent in summer 2007 is a historical mark of sea ice loss. More importantly, the distribution and extent of perennial versus seasonal ice is critical information to better understand the implications of the sea ice cover reduction to overall Arctic environmental change, commercial navigation, resource exploration and exploitation, and international territorial and security issues.

These changes demand careful and frequent observations of the state of Arctic sea ice. In this regard, Ku-band scatterometer data contribute significantly to Arctic sea ice identification, classification and mapping, and to monitoring the changes in the ice cover from melt onset to freeze-up. The continuity of Ku-band scatterometer observations of Arctic sea ice is important because:

- There is a large dynamic range in the backscatter signatures from different sea ice classes at Ku-band frequencies;
- The typically large swath of satellite scatterometer systems can cover the Arctic Ocean at least daily;
- Horizontal and vertical polarization scatterometer data can help to map ice extent and ice edge to fill in gaps when higher resolution synthetic aperture radar data are not available;
- Scatterometer-based maps of sea ice types have been instrumental in planning buoy deployments and science field campaigns as well as naval and ice-breaking operations;
- The distribution of Arctic sea ice classes as detected by Ku-band scatterometers is a critical input to seasonal ice forecasts which are increasingly important because the ice is changing so rapidly that climatologies have little predictive value;
- As the Arctic becomes dominated by seasonal sea ice, the role of thermodynamic melting becomes more important. In this regard, Ku-band scatterometer data can effectively monitor sea ice conditions through the melt period;
- Scatterometer sea ice products are combined with operational products and analyses derived from other satellite observations to generate composite or hybrid products that are more complete and robust than any single-source derived product;
- Specific QuikSCAT Ku-band scatterometer algorithms developed for sea ice research and applications are readily modifiable for use with OSCAT data allowing the extension of the long-term record of sea ice data products derived from Ku-band backscatter.

Because of these tangible benefits, the IICWG encourages NASA and NOAA to work on all fronts to ensure the continued availability of national and international satellite Ku-band scatterometer data in near real-time for sea ice observation over the Arctic and also the Antarctic. In particular, we urge you to support the development of future satellite Ku-band scatterometer



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capabilities with coverage of the Polar Regions to provide follow-on to OSCAT and the QuikSCAT legacy of sea ice observations.

Thank you for your consideration of these comments. If there is any other way that the IICWG can be of assistance, please do not hesitate to contact us.

Yours sincerely,

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