January 31, 2000

Dear *SeaWinds on QuikSCAT* Near−Realtime Data User:

The SeaWinds on QuikSCAT near−realtime (NRT) surface vector wind data are being released for use by operational weather forecasting and modeling organizations. The QuikSCAT NRT products contain both wind and backscatter data in a single, relatively compact format. The products will be distributed by NOAA/NESDIS in BUFR format for operational users.

Similar data products have been extensively examined both by the NASA/JPL QuikSCAT Project and by members of the NSCAT/QuikSCAT Science Team, with results presented at a Cal/Val workshop in early November. The evaluations at that time found that the preliminary QuikSCAT data generally met overall requirements (<2 m/s rms speed error, 20 degree rms directional error), but some systematic errors, accuracy variations, and potential processing refinements were identified to enhance the accuracy and utility of the data. These corrections and enhancements have been implemented by the Project. Further refinements will be implemented in the NRT processing chain within the next few months as they become available.

The November Cal/Val workshop identified several issues that needed to be addressed both in the non−real−time science products and in the NRT products:

1) *The H−pol backscatter cross−sections are biased low by 0.2 dB (relative to the V−pol measurements); this beam imbalance will be corrected in the very near future.*

   This correction was implemented in both the science and NRT processing immediately after the November 1999 meeting.

2) *The QuikSCAT backscatter and wind data are less accurate under raining conditions.*

   At present, two rain flag algorithms have been implemented, based on autonomous QuikSCAT backscatter measurements and tuned by comparison with SSM/I rain measurements. The rain "index" values resulting from both algorithms are provided in the NRT product. Placeholders for noise−only brightness temperatures from QuikSCAT, along with anticipated rain and attenuation indices based on these measurements, have been added to the NRT product record. Once the algorithms for collocating the Tb measurements on the swath and detecting rain are stabilized (within the next 2−3 months), these data items will be filled in. It is expected that a single, unified rain flag based on these algorithms will be implemented in the near future.

3) *Minor adjustments to the backscatter/wind model function, particularly in the azimuthal components, are needed to remove systematic direction errors.*

   This work is nearly complete, and when a validated model becomes available (within the next few weeks) it will be promptly implemented in the NRT processing.

In addition, several other improvements to increase the usefulness of the NRT data for land and ice applications, as well as for ocean winds, have been incorporated in the NRT data products.

Questions regarding the BUFR format and the logistics of NRT distribution of these products should be addressed directly to Gene Legg at NOAA (glegg@nesdis.noaa.gov). Questions and results pertaining to the accuracy of the QuikSCAT backscatter and vector wind measurements should be addressed directly to the JPL QuikSCAT Project [Tom Fouser (tfouser@mail1.jpl.nasa.gov), Wu−Yang Tsai (wtsai@mail1.jpl.nasa.gov), or Scott Dunbar (rsd@zephyr2.jpl.nasa.gov)].

We hope that you find these near−realtime QuikSCAT surface vector wind data useful. We look forward to your evaluations of the data quality and its impact on your applications.

Sincerely,

Carroll Winn
SeaWinds Scatterometer Project