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FEBRUARY 7, 1984  
844-42043 SRZM NL

TO: W.N. BROUW, SRZM  
FROM: D.S. RETALLACK, VLA

DEAR WIM,

MANY THANKS FOR AGREEING TO COME TO THE VLA TO HELP WITH THE PIPELINE MAPPING PROBLEMS. I HOPE THAT BETWEEN YOU AND BOB PAYNE, MANY OF THE BUGS CAN BE CORRECTED WHILE YOU ARE HERE.

THE FOLLOWING IS A LIST, IN DECREASING ORDER OF PRIORITY, OF <sup>2</sup>PROBLEMS THAT WE WOULD LIKE YOU TO WORK ON. THE HARDWARE AND OUR PROGRAMMERS WILL BE AVAILABLE AS MUCH AS IS REQUIRED AND WE SHOULD DISCUSS A PLAN OF ATTACK WHEN YOU ARRIVE.

1. THE MAP INDETERMINANCY PROBLEM WITH THE GRIDDER NEEDS TO BE FIXED OR CIRCUMVENTED. WHEN BOB PAYNE WORKED ON THIS PROBLEM LAST OCTOBER, HE FOUND THAT HE COULD GENERATE CORRECT GRIDDED DATA OUTPUT TO DISK BUT WHEN THE DATA WENT TO THE MAP-MAKING AP'S, ERRORS OCCURRED. CORRECTLY GRIDDED DATA WAS OBTAINED BY ADDING TIMING DELAYS AFTER THE IO BETWEEN AP'S WAS INITIATED. THE INDETERMINANCY IS APPARENTLY ASSOCIATED WITH THE LEVEL OF IO ACTIVITY. THE LOW LEVEL CODE IN THE AP'S SHOULD BE MORE CLEARLY DOCUMENTED AND TESTED.

2. THERE IS ONE NEW BUG WHICH BOB HAS NOT YET BEEN ABLE TO FIND OR FIX. WHEN THE OUTPUT MAP SIZE IS LESS THAN THE FET SIZE, THEN THE BEAM COMES OUT WRONG. THE UPPER HALF OF THE BEAM ROWS ARE NOT FLIPPED SO THAT THE BEAM IS NOT SYMMETRIC.

3. THE CORRECTNESS OF THE FORTRAN CODE SHOULD BE REVIEWED FOR THE 4 IF CONTINUUM CASE. ALSO FOR UV-PLANE SOURCE SUBTRACTION WHICH HAS BEEN<sup>2</sup> IMPLEMENTED.

4. THERE ARE OBSERVING MODES IN WHICH THE CHANNEL SEPARATION IS NOT CORRECTLY CALCULATED.

THERE ARE GRIDDING PROBLEMS WITH TIME-BASELINE DISPLAYS.

6. BOB ADJUSTED THE CODE THAT YOU LEFT FOR HANDLING THE CROSSING OF GROUP BOUNDARIES FOR SORTER DATASETS. IT MAY NOT BE CONSISTENT WITH WHAT YOU HAD IN MIND.

7. THERE IS A REAL NEED FOR YOU TO DOCUMENT, OR AT LEAST SPEND SOME TIME EXPLAINING, THE INTERNAL DATA STRUCTURES, FLOWS AND CONVENTIONS IN THE AP MAPPING ROUTINES.

8. THERE HAS BEEN A REQUEST FOR ADDING A DATA CLIPPING LEVEL FOR SELECTING INPUT VISIBILITY DATA. COULD THIS BE ADDED TO THE AP DATA SELECTION CODE EASILY?

BOB PAYNE WILL ARRANGE FOR SOURCE CODE LISTINGS TO BE AVAILABLE WHEN YOU ARRIVE AND BOB WILL BE AVAILABLE BY TELEPHONE DURING THAT WEEKEND. IF YOU NEED ANY OTHER FACILITIES PLEASE LET US KNOW. WE LOOK FORWARD TO SEEING YOU AT THE VLA.

BEST WISHES,  
DON

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