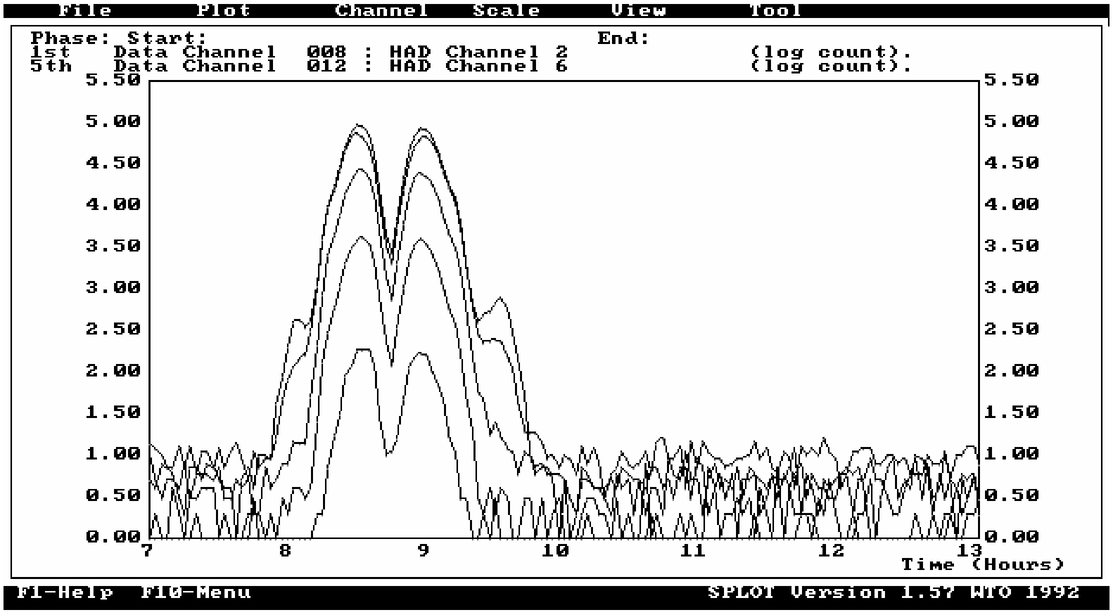

Figure 15 shows a "zoomed-in" view of the Van-Allen belt passage for the proton channels.

Channels 2 and 3 show the highest peaks (almost coincident in amplitude), with Channel 2 (and to some extent Channel 3) showing a curious second peak or "ring" around the main belt. This is very interesting indeed and needs further investigation. A double-peaked proton belt is not in the models!

Channels 4, 5 and 6 step down in particle flux more-or-less by a power law - as expected.

It took Phase-3D approximately 2 hours in total to traverse the belt (inward and outward bound).

Issues

CEDEX is the only experiment in AO-40 that when powered on autonomously wakes up and attempts to communicate with its managing task in RUDAK. This technique has proven quite successful in other satellites. Initial attempts to communicate with CEDEX indicated it was communicating with the CEDEX task but only time stamps were being logged to the file system. After the CEDEX experiment was powered off and back on proper communication was verified and data was logged. The reason for this initial difficulty is not clear at this point but is probably not related to the general idea of an experiment that autonomously attempts to communicate with a controlling task in a managing computer. Subsequent to that initial problem logging was successful until satellite power limitations required RUDAK and the experiments to be turned off for the sun-angle season. The next opportunity to work with CEDEX occurred in May and June, 2002. Through June 15, 2002, the symptom noted above again prevented logging data. Additionally the software in the RUDAK-B processor where the CEDEX task was being run crashed several times. At this writing it is believed this is a software problem and it is being investigated.

Future operation of the CEDEX payload in AO-40 is anticipated and is a priority for the mission. The software to communicate with CEDEX and log its data is neither complex nor large, and consumes little processing time. CEDEX has proven to be quite successful and is a strong candidate to be flown on future AMSAT missions that include a main processor and file system software.

MONITOR

The ionosphere MONITOR experiment is designed for passive sounding the space above the ionosphere in the HF band between 0.5 and 30 MHz. It measures the received signal strength with a frequency sweep or a repeat measurement on a selected frequency. The principal investigator for MONITOR is Peter Bakki from the University of Hungary.

MONITOR searches for the signals of terrestrial HF broadcasting sites that have passed through the ionosphere. Broadcasting stations work with high radiated power which in parts of the world is considered environment pollution. The objective of MONITOR is to better understand how this effects the ionosphere.

A program objective is to make simultaneous measurements of signal strength from the earth and