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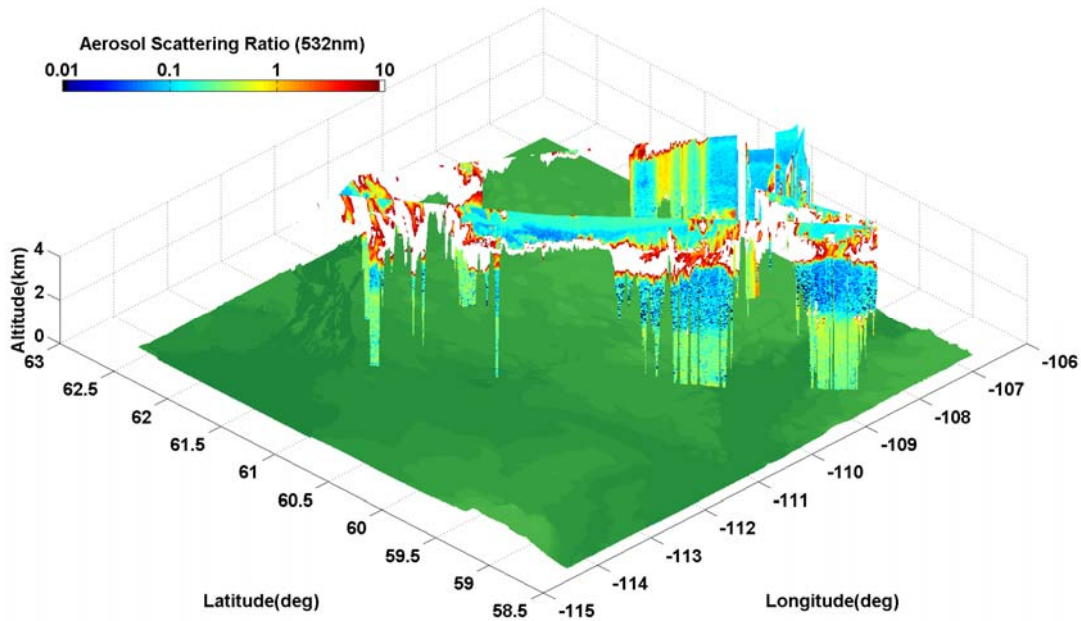
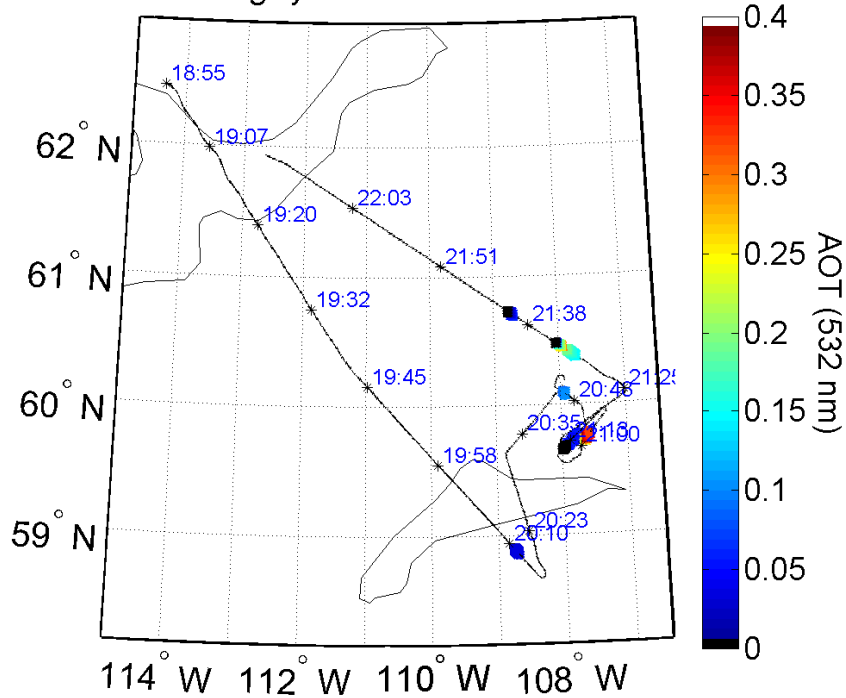
Flight Report

Aircraft :	LaRC B-200 King Air (N529NA) (Operating as NASA529)
Operating Site(s) From / To :	Yellowknife to Yellowknife (with operations near Uranium City)
Flight Date :	6/28/2008
Flight Number :	R-148
Take Off Time :	1253 Local (MDT), 1853 UTC
Landing Time :	1632 Local (CDT), 2232 UTC
Flight Time :	3.6 hours
Principal Investigator:	Rich Ferrare
Purpose of Flight :	Data <input checked="" type="checkbox"/> Ferry <input type="checkbox"/> Functional Check <input type="checkbox"/> Other <input type="checkbox"/>
Sensor Payload :	HSRL, Digital Camera, and RSP
Comments :	First ARCTAS II research flight launched from Yellowknife. Heavy cloud cover down low and at flight level limited both HSRL and RSP data gathering during portions of the flights. CALIPSO track essentially entirely cloud covered. Some success in working ground fires with WFF P-3 near Uranium City NDB. Intra-plane coordination worked well and ATC was very accommodating. Detailed comments and data images on following pages.

SUBMITTED: Chris Hostetler 867-446-6657 DATE: 6/28/2008

Flt R148 objectives were to acquire validation and science data along the CALIPSO track to the S-SW Yellowknife followed by observations of plumes from known fires in the region. The flight was coordinated with the P3. The flight track is shown in the figure below (color coded by Aerosol Optical Thickness (AOT) where the column below the aircraft was cloud free). Below the flight track map is a 3-D rendering of the Aerosol Scattering Ratio at 532 nm. Transparent areas in the curtain are regions where opaque clouds blocked signal from lower altitudes.

NASA Langley HSRL/B200 28-Jun-2008

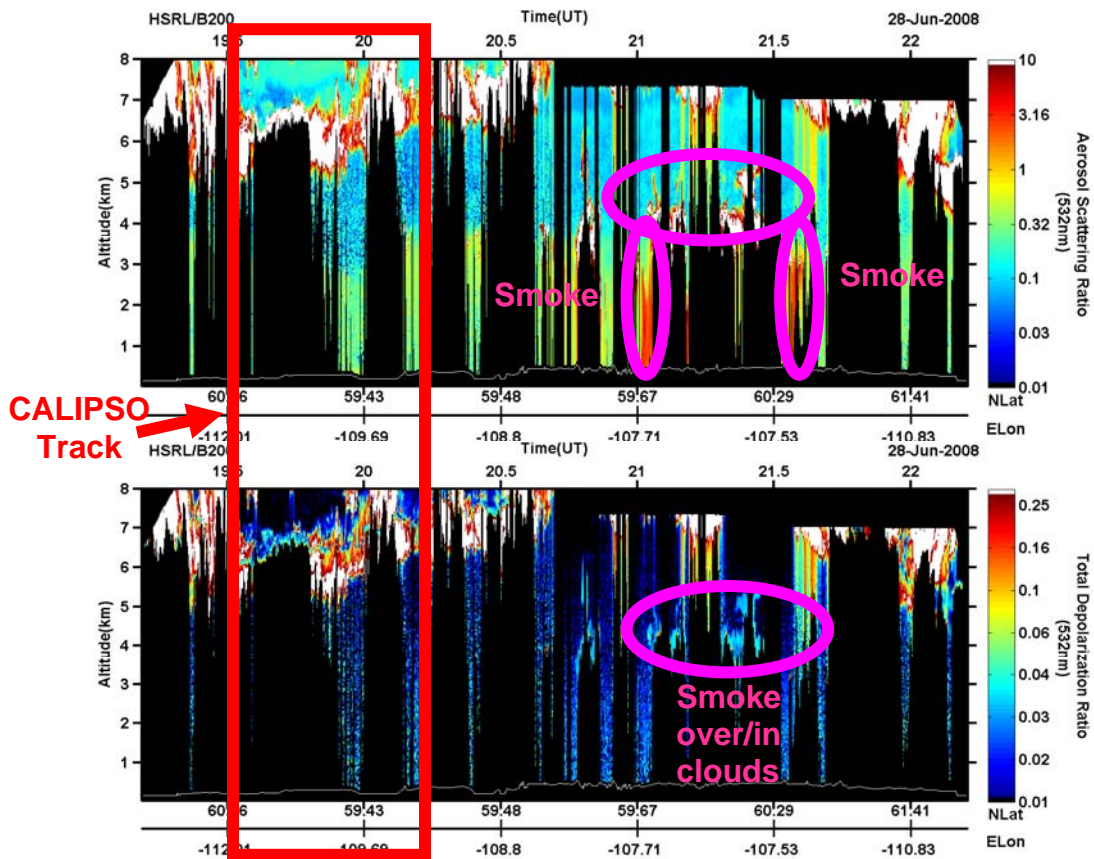


CALIPSO Underflight:

An optically thick layer of ice cloud was observed below the B200 on the CALIPSO leg. Cirrus were observed above the B200 at the northern end of the CALIPSO run, but it was believed to have been clear above at the southern end (to be verified by looking at CALIPSO data after the mission). For the southern end of the leg free of cirrus above the B200, the ice cloud at 6-7 km should make an interesting data set to assess RSP cloud retrievals and combined polarimeter-lidar retrievals. Also the ice cloud will provide data on color ratio that will be of interest to the CALIPSO team.

Fires:

At the end of the CALIPSO leg, the P3 and B200 coordinated in real-time to sample smoke plumes from fires near Lake Athabasca. Clouds at altitude obscured the HSRL and RSP measurements so the B200 descended to 25kft to get below the high cloud layer. The pilots reported seeing 3 large fires and 5-6 small fires and had occasional visual contact with the P3. In some cases, the rising smoke plume appeared to be generating cloud; however, this is not clear whether the plume was generating clouds or mixing with clouds as there were a lot of low-level clouds present in the region. In occasional clear regions HSRL (and possibly RSP) was able to observe plume structure. The P3 broke off the pattern at 2115 UTC. The B200 continued to work the area with raster scans across the smoke plumes until 2125 UTC and then RTB for a 2232 landing at Yellowknife.



The following are photographs of the smoke plumes and smoky haze in and among the clouds from the fires near Lake Athabasca.



