



---

# Polar Snowfall Hydrology: Opportunities

Thomas Piekutowski

27 June 2007



Canadian Space Agency  
Agence spatiale  
canadienne

Canada

# Snowfall Hydrology: Missions

---



Atmospheric Chemistry

*APOCC*

Aerosols

Clouds

CloudSat

Precipitation

EarthCARE (ESA/JAXA)

Winds

Evaporation

*PCW*

Snow Extent

*Mission Concepts RFP*

Snow Water Equivalent

Soil Water Content

SMOS (ESA)

Frozen-Thawed Soil

HYDROS – SMAP(?)

Vegetation



Canadian Space Agency  
Agence spatiale  
canadienne

Canada



# Mission Concept Studies

---

Request For Proposals summer 2007

Mission Concept Studies to begin 2008

## **APOCC (Atmospheric Processes of the Earth's Climate and its Change)**

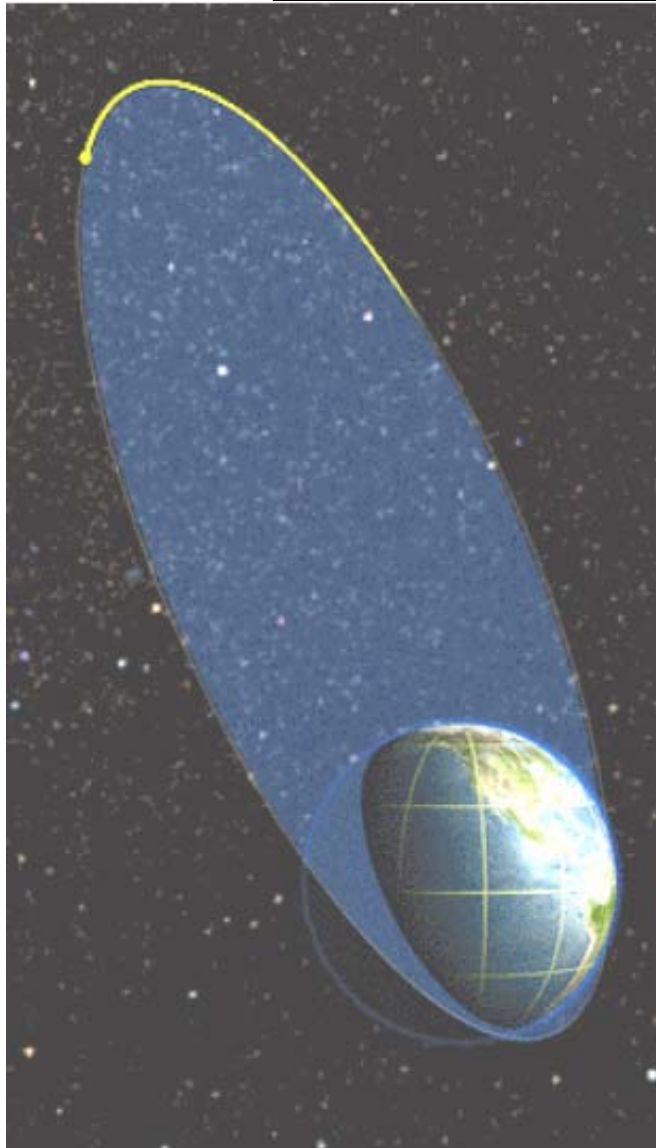
Atmospheric Science Community has stated interest in:

- Tropospheric Trace Gases, Aerosols and Air Quality
- Upper Troposphere – Lower Stratosphere Exchanges
- Middle Atmosphere Dynamics

## **New EO Mission Concepts**



# PCW



= **Polar Communication & Weather**

Concept Study to begin 2007

Two satellites in Molniya orbit  
for 24/7 observation of  
latitudes  $45^{\circ}$  -  $90^{\circ}$  N

GEO-type meteorological  
instrument(s)



# Seek Value

---

- We seek to maximize the benefit from our EO investments through missions that:
  - 🕯 Complement existing and planned missions with synergistic observations
  - 🕯 Fill recognized gaps
  - 🕯 Are done in partnership
  - 🕯 Address questions of particular importance for northern latitudes