

# APEX – Deep

EUROARGO

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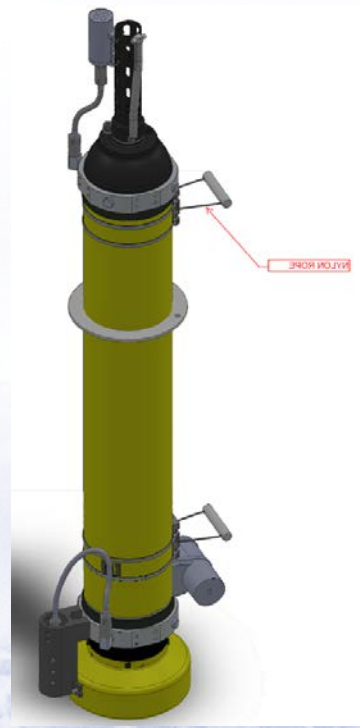
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# APEX – Deep Concept Guidance to TWR engineers

Design and build a profiling float capable of reaching 6,000 meters

Must be economically feasible – no titanium hull

Must have buoyancy reserve for additional sensors – CTD and ?

Use next generation controller – APF-11

Goal of at least 150 profiles using lithium batteries

Launch/Recovery with no special handling equipment

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# APEX – Deep Historical

- 2011 Basic Mechanical/Electrical design  
Preliminary glass testing  
Decision to use glass spheres for hull
- 2012 Cycle testing of spheres – 500+ cycles, 10,000 psi  
Glass hole pattern and drilled pressure testing  
Open/Close training  
Build Prototypes  
4,000 meter test dives
  - Hull 2 4,062 meters
  - Hull 3 4,069 metersIncorporate lessons learned, design mods, build





# APEX – Deep Status

2013 Successful profile from over 6,000 meters – FEB 26/27

Fall Primary goal = Lithium Battery Tests  
Secondary goal = additional sensor

2014 Commercially Available

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# APEX – Deep Spiral 1 test

October 30, 2012 – 4,069 meters  
South West of Hawaii, HI



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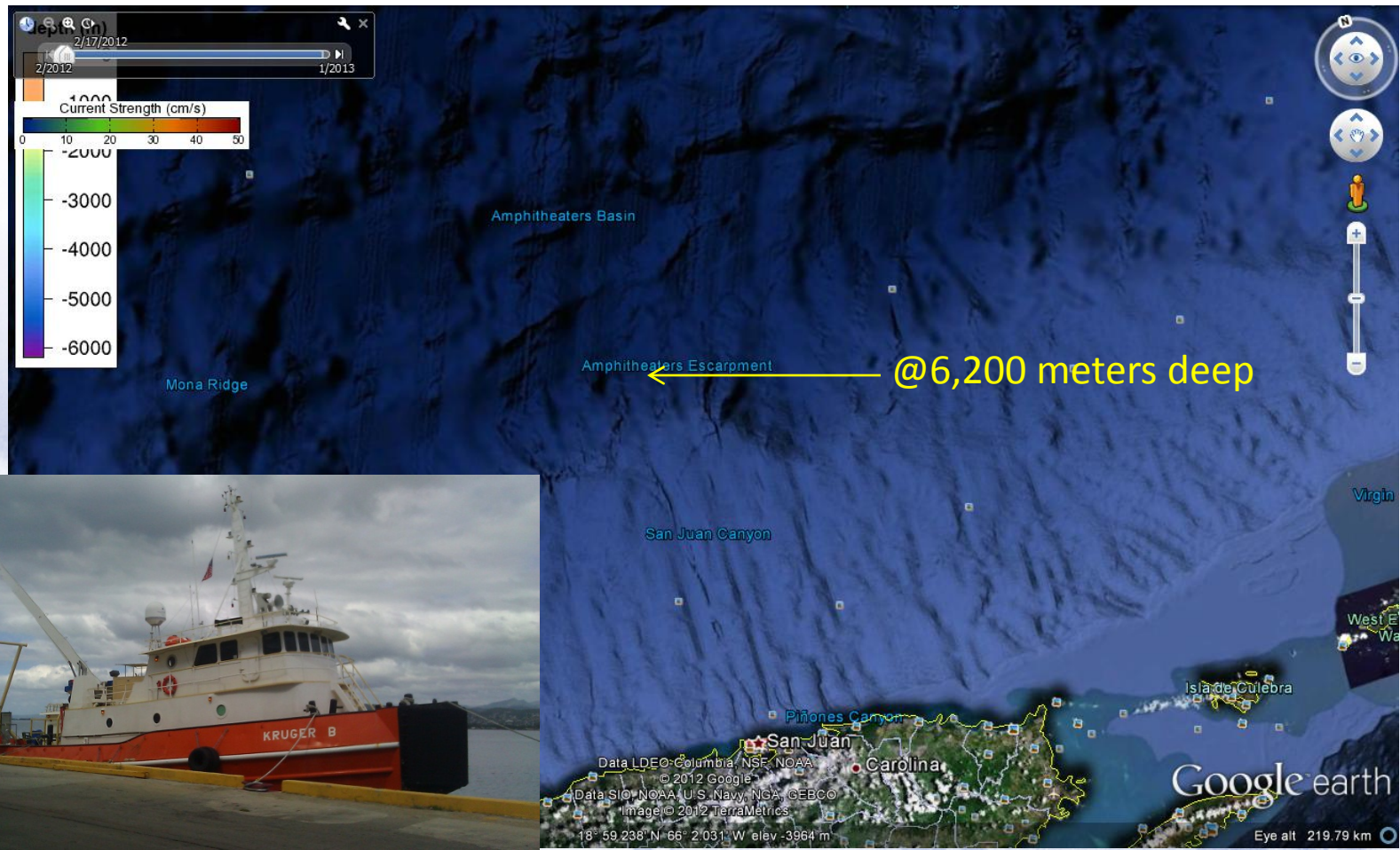


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# APEX – Deep FEB deployment



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# APEX – Deep FEB deployment



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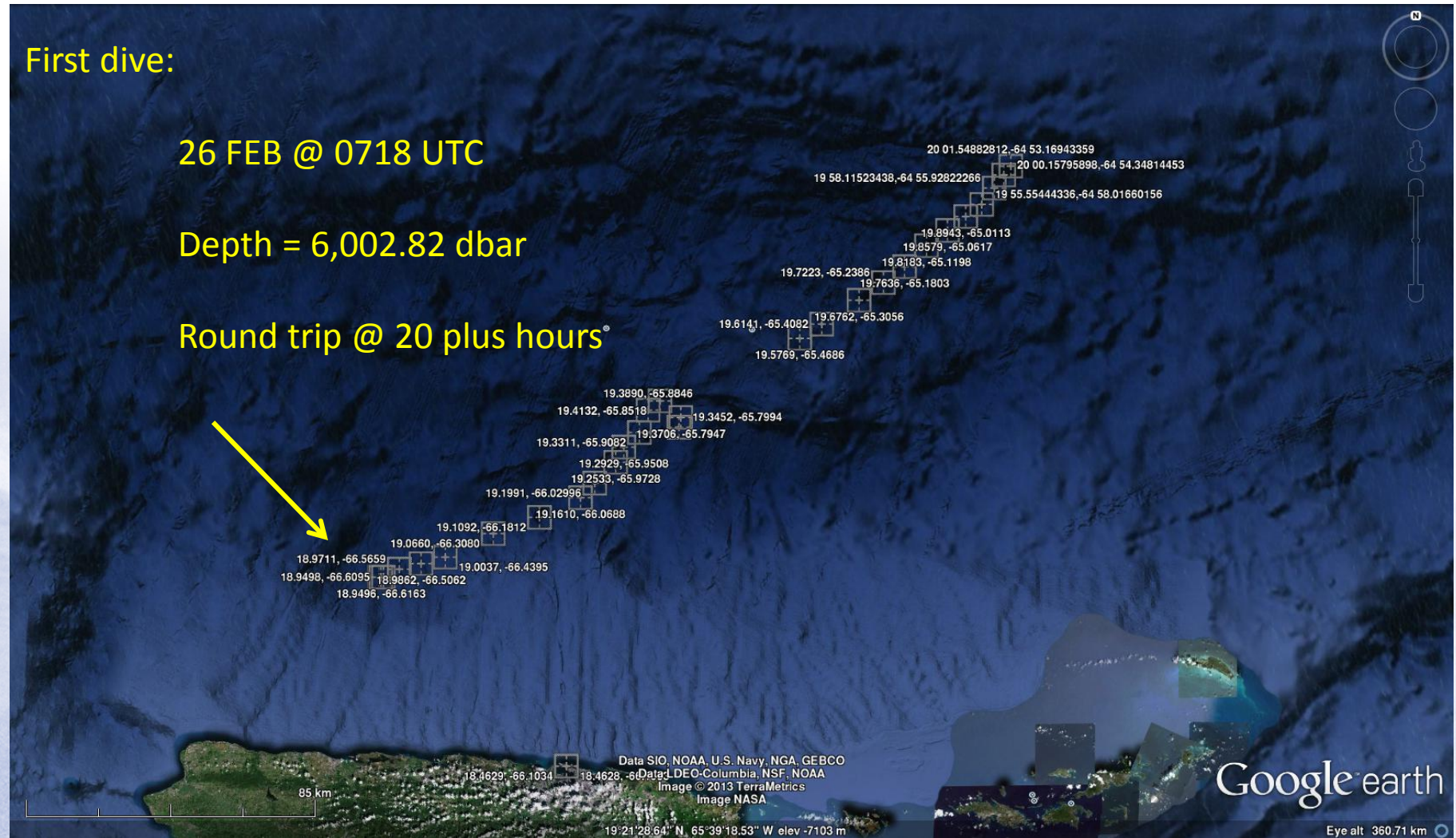
# APEX – Deep FEB deployment

First dive:

26 FEB @ 0718 UTC

Depth = 6,002.82 dbar

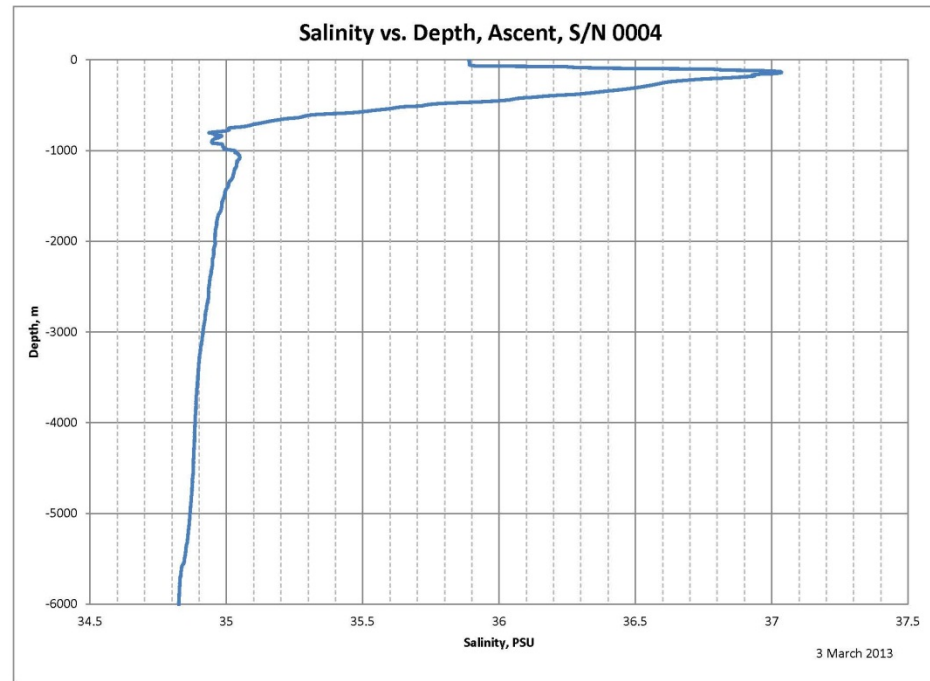
Round trip @ 20 plus hours\*



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# APEX – Deep Sample Data

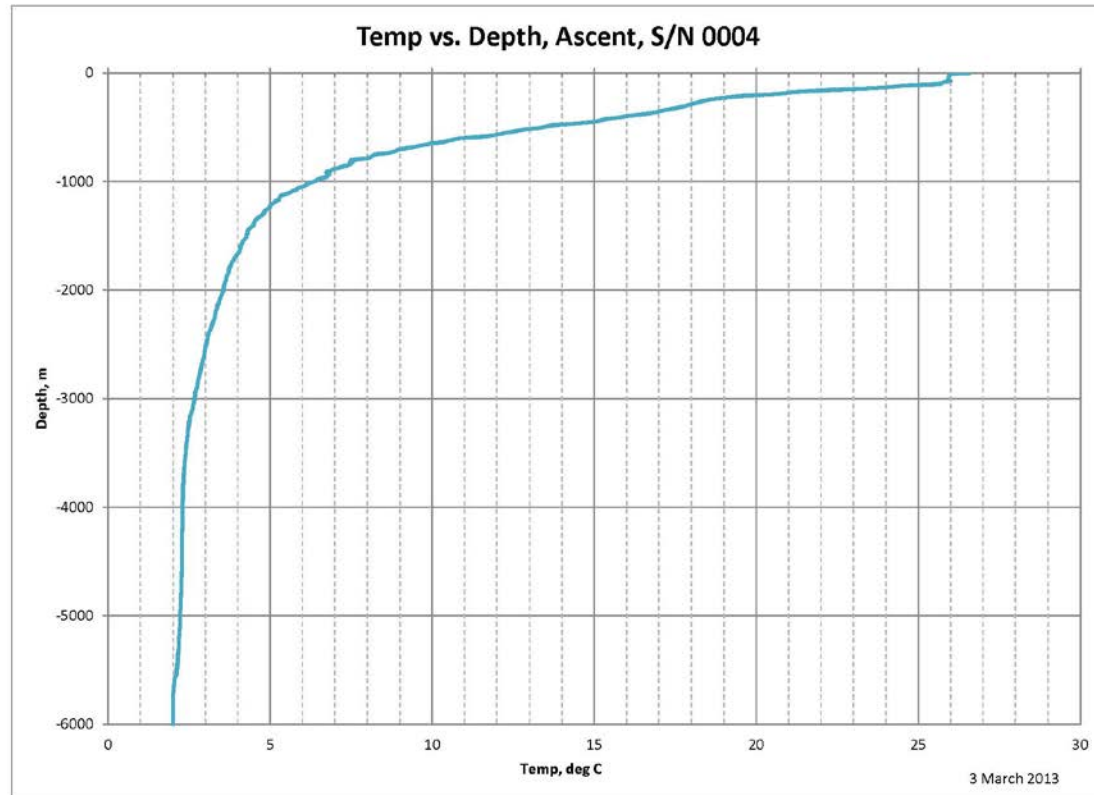


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# APEX – Deep Sample Data



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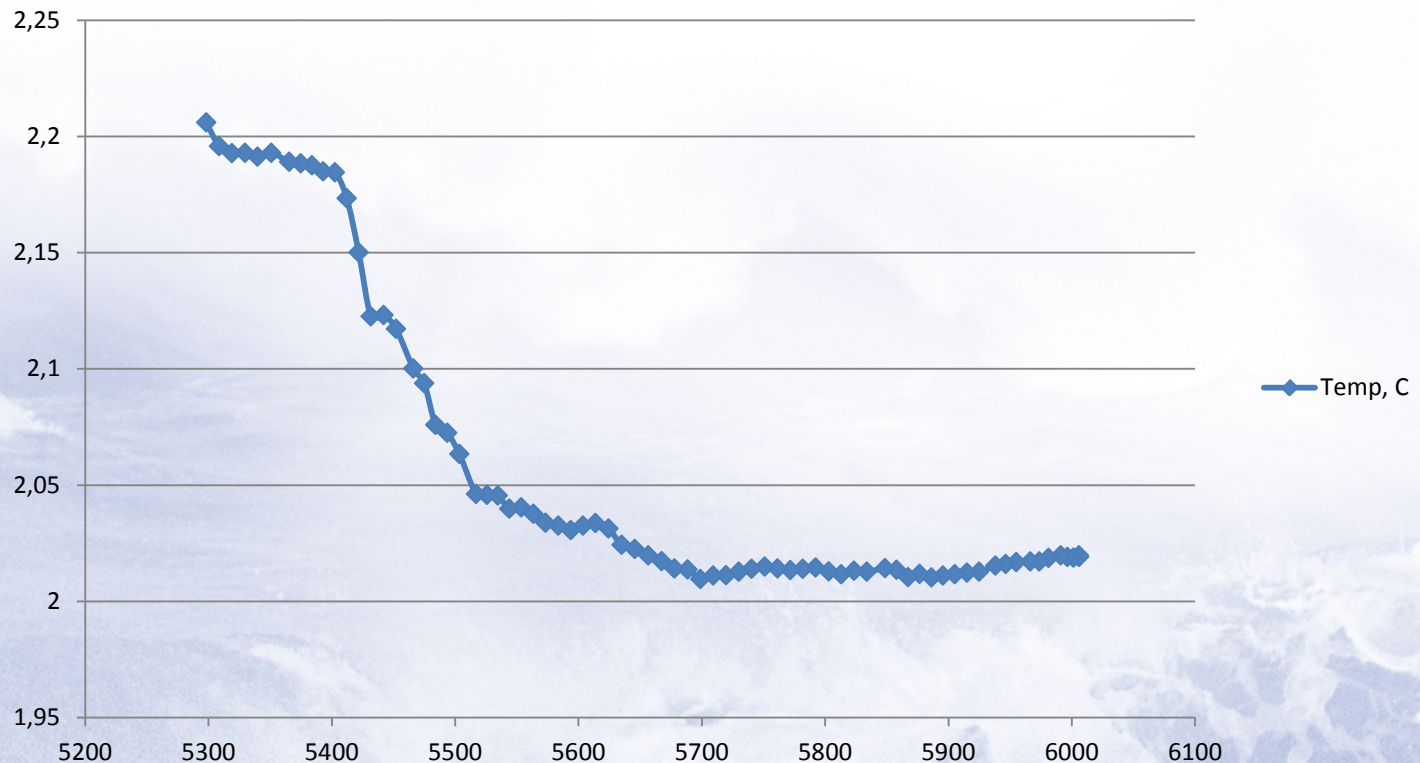


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# APEX – Deep Sample Data

Temperature (C) vs Pressure (dbar)



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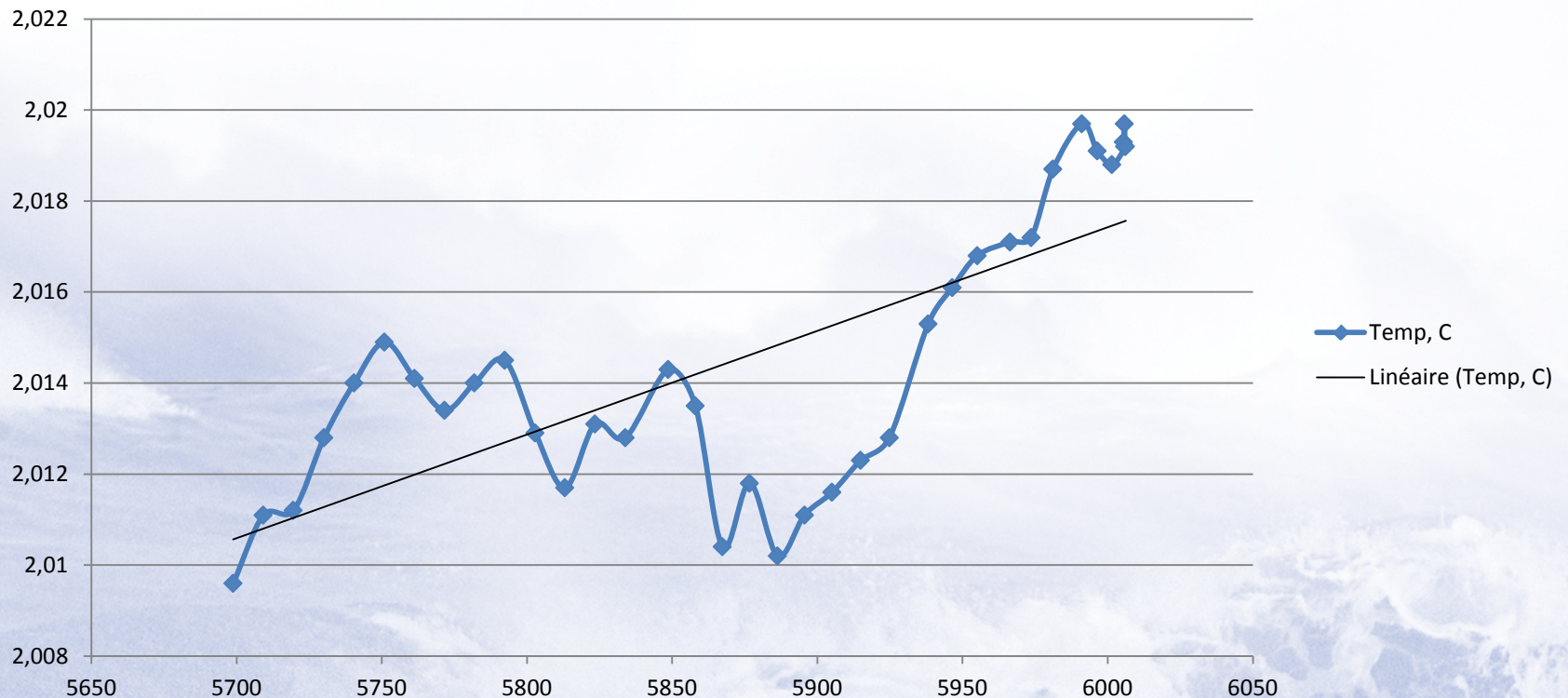
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# APEX – Deep Sample Data

Temperature (C) vs Pressure (dbar)



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# APEX – Deep Conclusions - Questions



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