

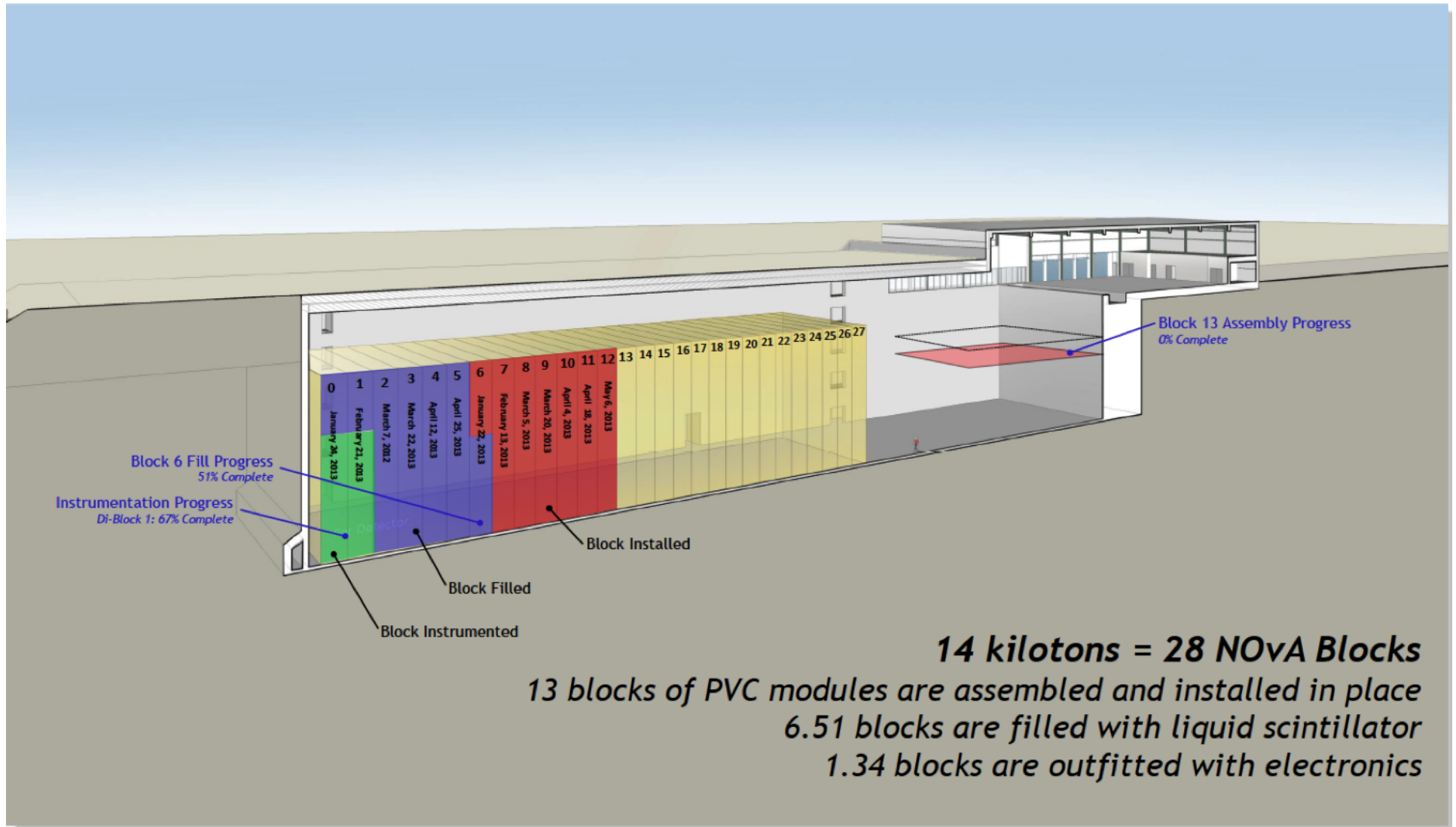
NO ν A Run Plans

14 May 2013

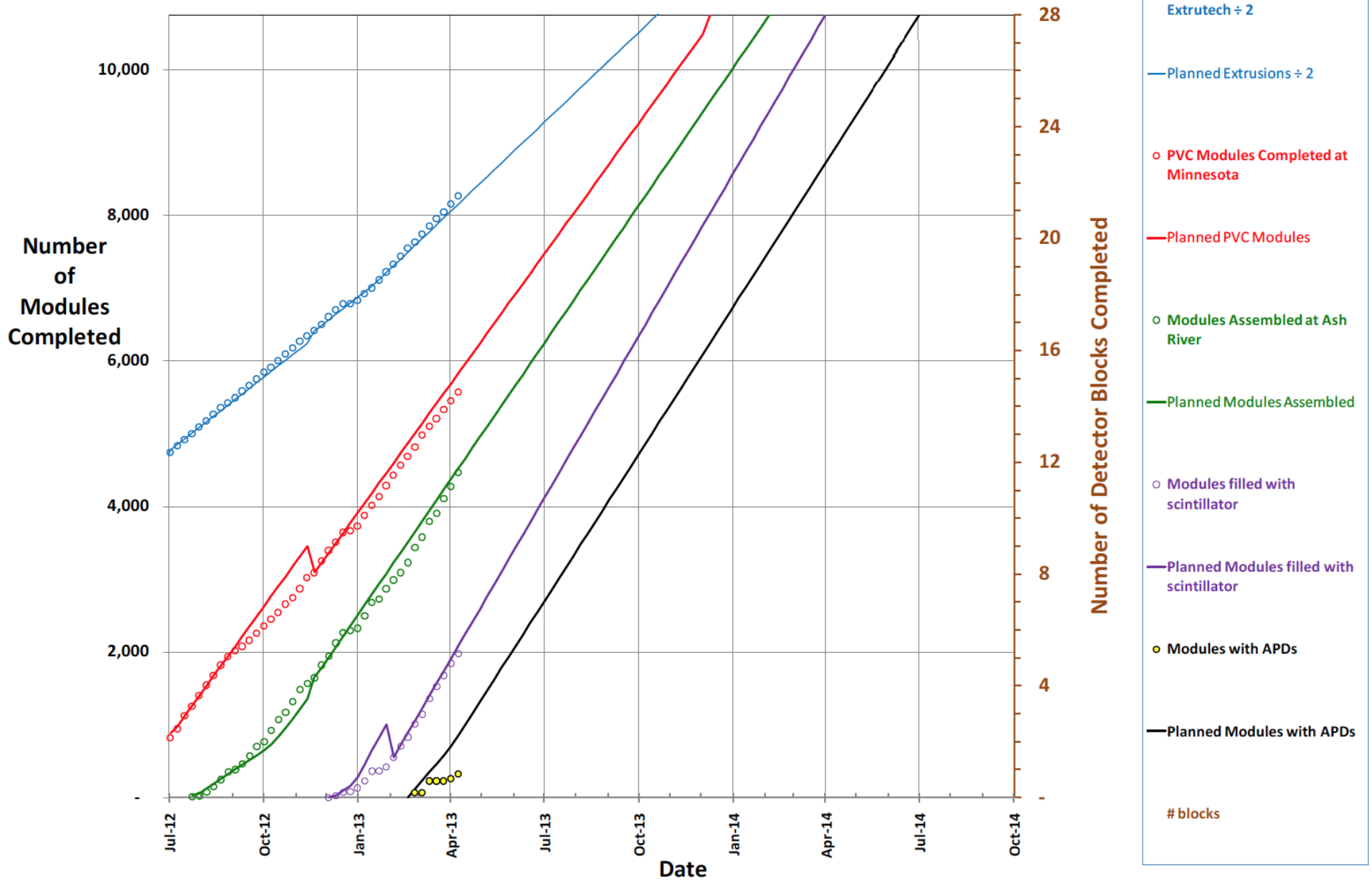




FD Status on 6 May 2013



NOvA Construction Progress (384 PVC modules per Block)





Near Detector Cavern





Near Detector Assembly at CDF



Glue machine

Module Vacuum
lifting fixture

Practice dry-stacking
with prototype modules

Production Modules

Leak tester



Near Detector Schedule (1)

- The Near Detector schedule is up in the air right now.
 - The problem is that we have a standing army at Ash River doing the Far Detector assembly. For financial reasons, we must keep supplying Ash River with modules from our factory at the University of Minnesota to keep that assembly progressing at full speed.
 - The UM factory got 3 blocks ahead of Ash River by starting earlier. We are using that head start to produce half the modules we need for the Near Detector, so that we can have half a Near Detector in time to use it for data to be presented at the Neutrino 2014 conference.



Near Detector Schedule (2)

- Below is the outfitting schedule for the first half:

		2013																							
		July				August				September				October				November				December			
Week		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Muon catcher	Leak test				2	2	2	2																	
	Fill				4	4	4	4																	
	Support structure Install								2	2															
	PDB/DCM install								2	2	2														
	APD cooling install										2	2	2												
	APD dry gas install											2	2	2											
Block 7-8	Leak test									2	2	2	2												
	Fill									4	4	4	4												
	Support structure Install													2	2										
	PDB/DCM install													2	2	2									
	APD cooling install															2	2	2							
	APD dry gas install															2	2	2							
Block 5-6	Leak test													2	2	2		2							
	Fill													4	4	4		4							
	Support structure Install																		2	2					
	PDB/DCM install																		2	2	2				
	APD cooling install																				2	2	2		
	APD dry gas install																				2	2	2		



Near Detector Schedule (3)

- When we can produce the other half depends on how fast the UM factory can produce modules, given their fixed infrastructure (again for financial reasons).
 - Time early is February 2014
 - Time late is April 2014



NOvA General Run Plan

- Commission the new beam as quickly as possible to its near term maximum power of about 580 kW.
- Run on neutrinos until we have about a $4 \sigma \nu_e$ signal.
- Evaluate the known physics at that point and, if warranted, switch to antineutrinos.



NOvA Thoughts on Special Runs (1)

- NOvA would not want any long special runs until the full Near Detector is operational.
- The only flexibilities are to lower the intensity or change the horn currents. The target cannot move and using a low energy target is not consistent with getting maximal NOvA results.
 - Low intensity runs will be useful for NOvA, but we should first see how much we get for free.
 - The flux has not changed. It is the same 120 GeV beam into a similar target. Thus, we should see how well the beam is understood before planning runs with lower horn currents. Any such runs should have a solid justification.



NOvA Thoughts on Special Runs (2)

- Because NOvA is off-axis, the neutrino energy is largely independent of the parent meson energy. Thus, it is thought that horn off or horn low running would not be as useful for NOvA as for on-axis experiments. However, this needs quantitative investigation.