

MINUTES OF MEETING

Page 1 of 3

Subject: LBT672 Wind Protection Discusson

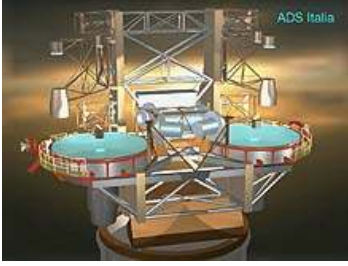
Date : 23-Dec-2007

By : Joar Brynnel

Participants	Org.	Participants	Org.	Additional distribution
Mario Andrighettoni	MG	Joar Brynnel	LBT	
Roberto Biasi	MG	Richard Green	LBT	
Piero Salinari	OAA	John Hill	LBT	
Armando Riccardi	OAA	Guido Brusa	LBT	
Daniele Gallieni	ADS			

Type of action : **A** = Action **D** = Decision **R** = Recommendation **S** = Statement **Q** = Question

Type	Responsible	Text	Comments
S	Brynnel	Maximum telescope operational wind speed is 80 kmh, telescope survival wind speed is 120 kmh, all TBC	
AI	Brynnel	Distribute relevant document for LBT specified wind speed	A11
S	Salinari	It is very important to minimize glass stress in the shell. Closed loop operation ensures that the shell is kept in position with minimum forces and glass stress.	
S	Salinari	Recommendation to limit the maximum allowed operational wind speed to 50 kmh.	
S	Brusa	At the MMT the wind speed limit while using the MMT336 is 35 MPH	
S	Salinari	Two alternative approaches suggested: <i>Alternative 1: Do not implement TSS.</i> This means: <ul style="list-style-type: none"> Implement anemometer close to LBT672 to monitor wind speed Guarantee a maximum time to close dome shutters under all conditions, including global loss of electrical power Implement UPS for LBT672 electronics <i>Alternative 2: Implement TSS</i>	
S	Brusa	MMT TSS applies about 1.5G to the shell. This is comparable to the holding force applied by LBT permanent magnets.	



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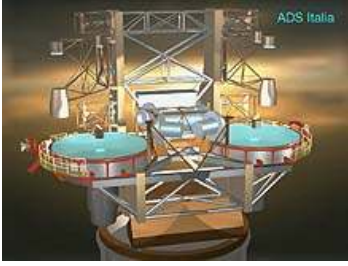
Page 2 of 3

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S	Gallieni	It is unclear whether a wind breaking skirt would be effective. This must be simulated before implementing.	
S	Brynnel	It is not obvious that there is physical space available between LBT672 and LBC to implement a skirt	
AI	Brynnel	Investigate clearance between LBT672 and LBC	AI2
S	Brusa	MMT336 is frequently in open loop for various reasons	
S	All	It is not acceptable to rely on closed loop operation for shell retention. The 1.5G permanent magnet holding force appears insufficient.	
R	Brusa	Shell holding force must be optimized. Wind simulation should be re-done assuming a continuous shell. This would give a number for the minimum required safe retention force.	
S	Gallieni	Maximal excursion (piston) allowed by central membrane is approximately 1 mm	
AI	Salinari	Action Items to group: <ul style="list-style-type: none"> - Calculation of stress induced by dust and debris trapped between shell and reference body - Risk analysis for telescope system failures - Preliminary design of retention ring (Gallieni) - Study feasibility of UPS for LBT672 electronics (Brynnel) - Analysis of single point failures that would prohibit closing observing doors (Brynnel) 	AI3 AI4 AI5 AI6 AI7
S	Biasi	If UPS for LBT672 electronics is implemented there is no need for TSS batteries	
S	Salinari	The following issues must be resolved before shipping LBT672 to Mt Graham: <ul style="list-style-type: none"> - Retention ring - Failure analysis - Guaranteed observing door closing in reasonable time 	
AI	Biasi	Make statement on impact on operational and handling procedures for TSS vs. inverted TSS	AI8



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Page 3 of 3

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D	All	Microgate shall proceed with implementation of TSS. Applied TSS current to be determined.	
D	All	Next meeting proposed for February 7	

End of minutes

List of Action Items

AI#	Responsible	Text	Deadline
AI #1	Brynnel	Distribute relevant document for LBT specified wind speed	Jan 31 2007
AI #2	Brynnel	Investigate clearance between LBT672 and LBC	Jan 31 2007
AI #3	Group	Calculation of stress induced by dust and debris trapped between shell and reference body	?
AI #4	Group	Risk analysis for telescope system failures	?
AI #5	Gallieni	Preliminary design of retention ring	Jan 31 2007
AI #6	Brynnel	Study feasibility of UPS for LBT672 electronics	Jan 31 2007
AI #7	Brynnel	Analysis of single point failures that would prohibit closing observing doors	June 2007
AI #8	Biasi	Make statement on impact on operational and handling procedures for TSS vs. inverted TSS	Jan 31 2007