Meeting Date: 23-Mar-2006

Participants: Australia: USA: Ted, CT, Johnson, Kyle, Edwin Taiwan: MT, Patrick, Hiroaki, Homin, Eugene, Paul S., Chia-Hao, Paul H., Philippe USA Dial-in = 1-877-505-6247; passcode 8339148 #; mod_code 2917771 # Outside USA Dial-in = 1 630 693 3224 Minutes Recorder: Kyle

I. <u>New Action Items:</u>

II. <u>Previous Action Items (still open):</u>

Kyle - Detailed test plan.
Philippe - Summary report of photogrammetry measurement.
Keiichi/Patrick - Mount testing.
Bill/Ted/Pierre - Modification of shelter.

III. <u>Closed Action Items (as of this meeting):</u>

IV. <u>Miscellaneous Discussions:</u>

Platform: MT - Philippe, can we estimate the worst case scenario of the platform deformation on optical pointing based on the modeling? We know the location of the OT and we should be able to make prediction. (29/Sep/05) Philippe - I will spend some time to look into the safety issues of operation.

Shelter:

(02/Mar/06)

MT - I will check with Debbie on the progress of the motor order. Pierre - Individual motor control is working, but there is some problem with the switches. We will also need some bumpers. I am expecting the load cells to arrive next week. After receiving them, I can finish the control part. (13/Oct/05)

Pierre - One year ago we asked Manfred to add a few relays and software in PLC to indicate mount is in parking position. We need to test its function whether the relay is closed when the mount is parked when next time I am in Hilo.

Mount:

Patrick - Summarize the report:

- 1. The repeatability is better than I thought before. If we make a cell-to-cell comparison between two pointing runs and average the difference over whole sky, the averaged error is only a few arcsec, as Vertex claimed.
- 2. Also did a test to observe the same star at the same time on second day. This is to compare the error in exactly the same az,el window.
- 3. One problem we found is with the interpolation table. It should improve the accuracy for tracking. The result on the other hand shows that with interpolation table turned on, the error seemed ok for a period and suddenly jumps off by a lot. I suspect it is due to the modeling of pointing error before generating the interpolation table. For example there is mount tilt, when it is not properly handled in the model, the interpolation table sometimes will over-compensate and sometimes under-compensate. We will continue investigating this issue.

4. No time for polarization pointing yet. And weather was not good. (02/Mar/06)

Homin - When we examine the network communication more closely, we found the type 1 timeout is always there. Sometimes you are lucky and you wouldn't see timeout, but

sometimes you are not so lucky. We still need another computer to monitor this timeout issue. (23/Feb/06) Patrick - We should keep updating the log of changes to the platform. (25/Aug/05) Patrick - Some temperature sensors have loose wires that need to be soldered. Someone onsite or in Hilo can do it. Site: CT - We have wired cables for several electronic boxes and connected the IF cables. Joshua is routing cable now. We've also installed cables in the 2^{nd} correlator box. Ted - In the past week, we were doing preparation work for shelter elevation. Tomorrow we will have the H-beam and crane ready to move the shelter. And tomorrow we will also have the sleeping container on site. However, it requires a certified electrician to hook up power for the container, so we will probably do it a little bit later. Ted - The procedure of elevating the shelter is to first move it toward south by a few feet, and we install the I-beam and H-beam. After we finish, then we will move the shelter back on top of the I-beam and H-beam. Ted - Yesterday Johnson installed Rx6 (the 5^{th} receiver on platform) and will install Rx5 next week after shelter elevation. Philippe - After the shelter is elevated, could you measure the clearance between platform and the shelter? MT - Please be careful when operating shelter after it is elevated. There might be some hidden problem we did not notice, so just be careful. (26/Jan/06) MT - Keiichi could you start thinking about the observing plan for the year based on some information and assumption of hardware availability and put it in writing to show people? (19/Jan/06)MT - I asked Philipe to start design an insulating wrap around the cone and hope to reduce thermal deformation. That's a long term plan. (08/Dec/05)**Pierre** - I got a guote for the 2ndhand generator. It's about 10k including shipping to site. I'll also look for some comparison. (11/Aug/05) M.T. - Open issues in general on site: (1) spare parts for the mount. Philippe will be in charge of it. (3) lightning protection (4) emergency generator (6) accommodation on site -> 2nd container for sleeping. (7) a new car (2) helium lines and cables routing to the platform (5) how do people access the platform. Cherry-picker, ladder? Receiver: Johnson - Rx1,2,3,4,6 are installed on platform. Rx5 is under testing in Hilo. We need 2 to 3 days to finish the testing. We are waiting for LNA for Rx7. It's IF/LO module already sent to Dayton for modification. Johnson - We have enough Andrew cables for 6 elements. And additional quote has been sent. Delivery date usually is two weeks. We could be getting it soon. (23/Feb/06) MT - Patrick, please summarize the preparation work for 1.2m beam pattern measurement, and we'll also need the schedule for 1.2m dish. Let's discuss this issue offline or later. (08/Dec/05)**Pierre** - I found that the LNA bias comes from a 7805 regulator which is sensitive to temperature change. I ordered a 8588 chip which is programmable and more stable. I plan to use hair dryer to test it.

(10/Nov/05)

 ${\bf Kyle}$ - The first two Rx on the platform can accept one polarization of calibration when the cal source is ready.

(09/Jun/2005)

Pierre - Two quick fixes to the LNA power supply card.

- 1. Reverse the protection diode instead of removing it should provide a protection at 3V.
- 2. The polarized capacitor at output is reversed and I suspect it is dead. They should be replaced.

LO/IF:

 ${\tt Johnson}$ - We plan to remove the old If/LO modules on Rx3 and Rx4 next Monday and Shu-Wei will upgrade them.

(02/Mar/06)

Eugene - #7 and #8 are all tested and shipped out yesterday.

<u>Correlator:</u>

CT - We want to modify the doors of correlator boxes. If we put some servicing holes on the door, we would not need to lower the entire box just to trim the phaseshifter inside. I have talked to Bill and he will help me with the design. CT - We tried to scan the sun again this Monday. However the power supply board had no output voltage. After debugging for whole afternoon it was back, but we don't know why. And later the weather was not good, so we don't have 2nd light. MT - In case this kind of problem happen again, what will you do? Spare parts? CT - We should prepare some spare modules. To replace the power supply board for correlator box, it will at least take 1 hour because we need to lower the box and remove many semi-rigid cables to take it out.

Kyle - About the fringe strength of the first light, I suspect the signal was weak because the data was not taken at the peak. It is supported because when I plot all four lag fringes together, the phase difference between them seems more consistent with far sidelobe of the fringe envelope instead of the inner main lobe. However, I also fount this argument strange because the kind of error I just described would require several degree in pointing error and it is unlikely. So the plan now is to take a longer scan, about 1 hour in total to identify the problem.

Kyle - Another issue is about the platform polarization. We know the mount was not installed aligned to the north and the error has been corrected in the Vertex software for pointing. How does this error affect the platform orientation? Is it also corrected? The platform orientation is related to the projected baseline length. And using CCD to verify it is not trivial since we don't know the relation between CCD and platform. I will send another email to describe this problem.

(02/Mar/06)

MT - Kyle talked to me about the phase center alignment. He seemed to think we can do
phase center before aligning the receiver+dish. What do you think?
CT - I think if we align the rx+dish, it is more like an exercise because we will need to
remove the receiver later when we replace the IF/LO box. We can discuss it later.
CT - Next week we can also do some long term monitoring or offset issue.
(23/Feb/06)
CT - Eventually we will pull a cable to connect the 10MHz from GPS to correlator PC.
(16/Feb/06)
CT - I checked the new corr PC in Taipei and it looks ok but haven't finished yet. So I
will ship it out next time. As for the prototype data board, they are compatible with the

will ship it out next time. As for the prototype data board, they are compatible with the new system. So I can set up another system down in Hilo some time. I am still working with Warwick to solve the data transfer process problem. (26/Jan/06)

CT - As for parts for expansion, I haven't heard from Warwick because he just got back from vacation. I will contact him again.

Calibration System:

(23/Feb/06) Homin - Yen, I-Chen (Daniel) will come and work with Kyle. First thing may be to work on calibration system. (09/Feb/06) **Pierre** - I think the thing to start could be the mechanical structure Chia-Hao designed. (13/Oct/05) Kyle - I will put together a schedule when the calibration should be online and when we should really push to finish the system. (29/Sep/05) Kyle - I will circulate the test results presented in the workshop for more comments. And we also need to discuss the next step of the calibration system. <u>Dish:</u> Paul S. - Dr. Ong informed that they are polishing the surfacing and will be ready for surface measurement before coating. (02/Mar/06) Locutus - About the 60cm dish, I still have to measure the last dish's beam pattern. Right now we are lacking spectral analyzer. Eugene is going to check with Agilent and see when it will come back. The new feedhorn fixture is being made now. (23/Feb/06) Ted - We have studied the cover of 60cm dish. We can either hold the fabric with aluminum frame of tight it down with wires. Bill - I think we can order more Goretex fabric to test both ideas. <u>Testing:</u> Kyle - I am putting down the testing plan for correlation test on site now. I

will circulate soon.

(09/Feb/06)

MT - Kyle, please work with CT and Johnson to produce a more detailed test plan.

Misc:

(02/Mar/06)

Patrick - I am wondering about the second optical telescope issue. One suggestion is to install the spare C-8 on the platform and swap ccd with the original C-8 for some quick result. In the long run, we would still like to set up an independent system. MT - That's fine. The issue now is with the OT bracket. Bill thinks the bracket will need some modification. I think after Johnny finishes with translation stage, he could work on the bracket. (26/Jan/06) Keijchi - Mark Birkinshaw and Katy Lancaster are planning to come to Hilo. When will we

Keiichi - Mark Birkinshaw and Katy Lancaster are planning to come to Hilo. When will we be doing fringe?