

ARM Manus Site (ARCS-1) H&S Summary Report Checklist
Manus Island, Papua New Guinea

Date: _____

1. SKYRAD Unshaded PSP (Downwelling Global SW):
 - Color ok?
 - Min/max between _____ and _____
 - Plot

2. SKYRAD Shaded PSP (Downwelling Diffuse SW):
 - Color ok?
 - Min/max between _____ and _____
 - Plot
 - On the **skyrad_psp.gif** plot, compare shaded (diffuse) PSP shape to mfrsr_diffuse.gif shape (NOTE that magnitude comparison is meaningless)
 - On the **skyrad_psp.gif** plot, compare unshaded (global) PSP and Sum shape to mfrsr_global.gif shape (NOTE that magnitude comparison is meaningless)
 - On the **skyrad_psp.gif** plot, the Sum and unshaded PSP should show good agreement
 - On the **skyrad_psp.gif** plot, the ratio (sum/global) should generally be between 0.97 and 1.03 except for early/late in daylight time. Some occurrences of the ratio lying between 0.95 and 1.05 are acceptable.

3. SKYRAD unshaded PIR (Downwelling Global LW):
 - Color ok?
 - Min/max between _____ and _____
 - Plot

4. SKYRAD shaded PIR (Downwelling Shaded LW):
 - Color ok?
 - Min/max between _____ and _____
 - Plot
 - On the **skyrad_pir.gif** plot, compare shaded to unshaded PIRs – they should be within $2-4 \text{ Wm}^{-2}$ of each other and should not have much diurnal variation in the difference

5. SKYRAD NIP (Normal Incidence Direct SW)
 - Color ok?
 - Min/max between _____ and _____
 - On the **skyrad_nip.gif** plot, the Avg. must lie between min and max
 - On the **skyrad_nip.gif** plot, the Max often has a “frown” (upside-down “U”) shape (unobstructed meas)
 - Compare the **skyrad_nip.gif** plot with the MFRSR data plot.

6. SKYRAD IRT (Sky Brightness Temperature)
 - Color ok?
 - Min/max between _____ and _____
 - Plot
 - On the **skyrad_irt.gif** plot, the Avg. must lie between min and max (if Avg. is near 30° or above, look for corresponding precip. on **smet_precip.gif** plot)

7. SKYRAD UVB (Downwelling Global UVB):
 - Color ok?
 - Min/max between _____ and _____
 - Plot
 - On the **skyrad_uvb.gif** plot, compare shape to unshaded PSP should be similar, but smoother

8. GRNRAD PSP (Upwelling SW):
 - Color ok?
 - Min/max between _____ and _____
 - Plot
 - On the **gndrad.gif** plot, the upwelling SW should be less than skyrad unshaded PSP (for Manus, it should be roughly 20% of unshaded PSP value, *for Nauru, it should be roughly 45-50% of unshaded PSP value*)

9. GRNRAD PIR(Upwelling LW)
 - Color ok?
 - Min/max between _____ and _____
 - On the **gndrad.gif** plot, the upwelling LW should be greater during daylight, how much greater is correlated with the amount of downwelling SW from skyrad unshaded PSP

10. GRNRAD IRT (Ground Brightness Temperature)
 - Color ok?
 - Min/max between _____ and _____
 - Plot
 - On the **gndrad.gif** plot, the gnd brightness temp should also be greater during daylight compare shape to upwelling LW

11. GRNRAD PSP Net Radiation (measured):
 - Color ok?
 - Min/max between _____ and _____
 - Plot

12. MFRSR Global counts:
 - Color ok?
 - Min/max between _____ and _____
 - Plot

13. MFRSR Diffuse Counts:

- Color ok?
- Min/max between _____ and _____
- Plot

14. MFRSR Detector Temp:

- Color ok?
- Min/max between _____ and _____
- Plot

15. MPL Cloud Base Heights:

- Color ok?
- Min/max between _____ and _____
- Plot

16. MPL Energy Monitor:

- Color ok?
- Min/max between _____ and _____
- Plot

17. MPL Detector Temp:

- Color ok?
- Min/max between _____ and _____

18. MPL Laser Temp:

- Color ok?
- Min/max between _____ and _____
- Plot

19. MPL Total Counts:

- Color ok?
- Min/max between _____ and _____
- Plot

20. MPL Background Signal:

- Color ok?
- Min/max between _____ and _____
- Plot

21. Ceilometer Cloud Base Heights:

- Color ok?
- Min/max between _____ and _____
- Use the **mpl.gif** plot and the **vceil_cb.gif** plot to check for gaps and to compare lower altitude MPL with Vceil (but there will be some differences related to instrument gating and sensitivity issues)

22. Ceilometer Laser Pulse Energy:

- Color ok?
- Min/max between _____ and _____
- Plot

23. SMET Air Temp:

- Color ok?
- Min/max between _____ and _____
- Plot

24. SMET RH:

- Color ok?
- Min/max between _____ and _____
- On the **smet_temp_rh.gif** plot, the air temp and RH are inversely related in the TWP (i.e., when one goes up, the other goes down)
- On the **smet_temp_rh.gif** plot, the RH theoretically should be near 95-100% at Manus at night
- On the **smet_temp_rh.gif** plot, the RH theoretically should be at least on the high end at Nauru at night

25. SMET Precipitation:

- Color ok?
- Min/max between _____ and _____
- The **smet_precip.gif** plot should be “flat and low” or (ideally) none when no rain
- Use the **smet_precip.gif** plot to compare to anomalous skyrad IRT values
- Use the **smet_precip.gif** plot to compare to anomalous MWR values, and check for long recovery time (i.e., the MWR blower heater is not functioning correctly)

26. SMET Atm Pressure:

- Color ok?
- Min/max generally between _____ and _____
- On the **smet_pressure.gif** plot, should see “the wave”

27. SMET Wind Speed:

- Color ok?
- Min/max between _____ and _____
- On the **smet_wind_speed.gif** plot, the wind speed from 1 and 2 should be right on top of each other, except might show slight differences if the wind speeds are low (1-2 m/s)

28. SMET Wind Direction:

- Color ok?
- Min/max between _____ and _____
- On the **smet_wind_dir.gif** plot, the wind direction from 1 and 2 should be right on top of each other, except might show slight differences if the wind speeds are low (1-2 m/s)

29. MWR Column Liquid Water:

- Color ok?
- Min/max between _____ and _____
- On the **mwr.gif** plot, see if column LQ goes up for clouds, else generally resides around 0.0010

30. MWR Column Water Vapor:

- Color ok?
- Min/max between _____ and _____
- On the **mwr.gif** plot, see if column WVP is generally slow changing between 3 and 7 cm
- On the **mwr.gif** plot, see if both WVP and LQ will “spike” during precipitation and compare to the **smet_precip.gif** plot. After the precipitation event ends, WVP should recover if the heater/blower is working correctly.

31. Cloud Radar (MMCR) Transmitted Power:

- Color ok?
- Min/max between _____ and _____
- Plot

32. Cloud Radar (MMCR) Faults:

- Color ok?
- Min/max _____ and _____
- plot

33. WSI Daily File Count:

- Color ok?
- Min/max between _____ and _____
- Plot

34. WSI Daily File Mbytes:

- Color ok?
- Min/max between _____ and _____
- Plot

35. BBSS Sonde Pressure:

- Color ok?
- Min/max between _____ and _____
- Plot

36. BBSS Sonde Dry Bulb Temperature:

- Color ok?
- Min/max between _____ and _____
- Plot

37. BBSS Sonde Dew Point Temperature:

- Color ok?
- Min/max between _____ and _____
- Plot

38. BBSS Sonde Relative Humidity:

- Color ok?
- Min/max between _____ and _____
- Plot

39. BBSS Sonde Ascent Rate:

- Color ok?
- Min/max between 4 and 6
- Plot

40. BBSS Sonde Binary File Count:

- Color ok?
- Min/max between 2.032 and 15.242
- Plot – Is there an increase in file count corresponding to a Launch.

41. ADaM Data Disk % Full:

- Color ok?
- Min/max between 1.613% and 75%
- Plot

42. ADaM Removable Disk1 % Full:

- Color ok?
- Min/max between 1.613% and 75%
- Plot

43. ADaM Removable Disk2 % Full:

- Color ok?
- Min/max between 1.613% and 75%
- Plot
- Are Disk1 and Disk2 of equal % full?

44. APC UPS Battery Capacity:

- Color ok?
- Min/max between _____ and _____
- Plot

45. APC UPS Internal Temperature:

- Color ok?
- Min/max between _____ and _____

46. APC UPS Load Power:

- Color ok?
- Min/max between _____ and _____

47. PV Battery Voltage:

- Color ok?
- Min/max between _____ and _____
- Plot

48. D Current Phase A:

- Color ok?
- Min/max between _____ and _____
- Plot

49. D Current Phase B:

- Color ok?
- Min/max between _____ and _____

50. D Current Phase C:

- Color ok?
- Min/max between _____ and _____

51. I Current Phase A:

- Color ok?
- Min/max between _____ and _____
- Plot

52. I Current Phase B:

- Color ok?
- Min/max between _____ and _____

53. I Current Phase C:

- Color ok?
- Min/max between _____ and _____

54. U Current Phase A:

- Color ok?
- Min/max between _____ and _____
- Plot

55. U Current Phase B:

- Color ok?
- Min/max between _____ and _____

56. U Current Phase C:

- Color ok?
- Min/max between _____ and _____

57. D Temperature:

- Color ok?
- Min/max between _____ and _____
- Plot

58. I Temperature:

- Color ok?
- Min/max between _____ and _____

59. U Temperature:

- Color ok?
- Min/max between _____ and _____

60. E Temperature:

- Color ok?
- Min/max between _____ and _____

61. D RH:

- Color ok?
- Min/max between 61.290 and 83.871
- Plot

62. I RH:

- Color ok?
- Min/max between _____ and _____

63. U RH:

- Color ok?
- Min/max between _____ and _____

64. E RH:

- Color ok?
- Min/max between _____ and _____

65. SAM Alarms:

- Color ok?
- Problem areas?

66. Radiometers:

- On the **eff_temp.gif** plot, the gnd brightness temps from IRT and PIR should be very close.
- On the **eff_temp.gif** plot, the sky brightness temps from both PIRs should be very close.
- On the **eff_temp.gif** plot, the sky brightness temps from IRT should be correlated with sky brightness temps from both PIRs, and will equal them during significant precipitation episodes.