AMF/GNDRAD Reconfiguration: *Moving the White CoolCell*

ARM Radiative Processes Working Group

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ACRF Upwelling Irradiances

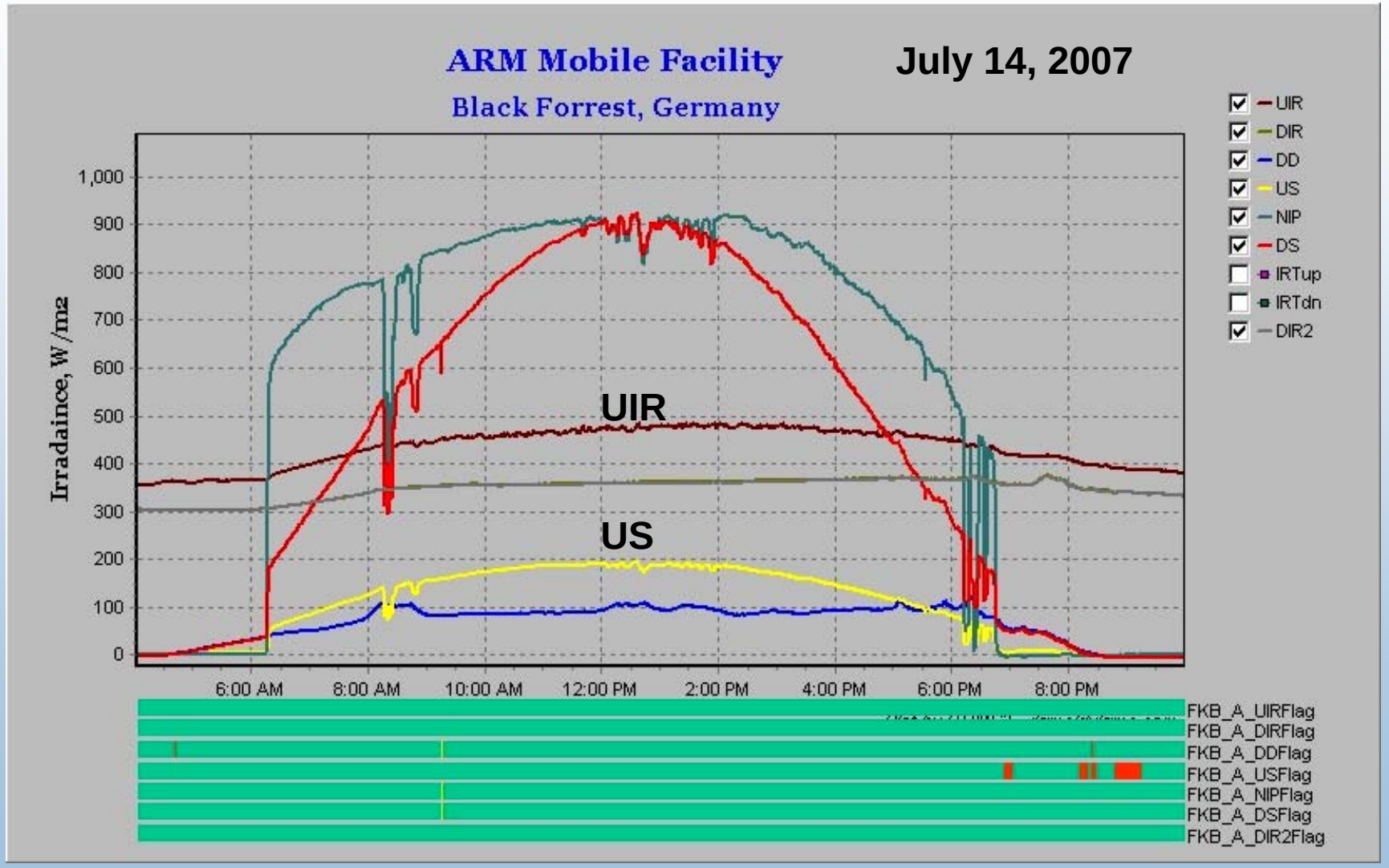
Infrared UIR
Shortwave US

AMF Upwelling Irradiances

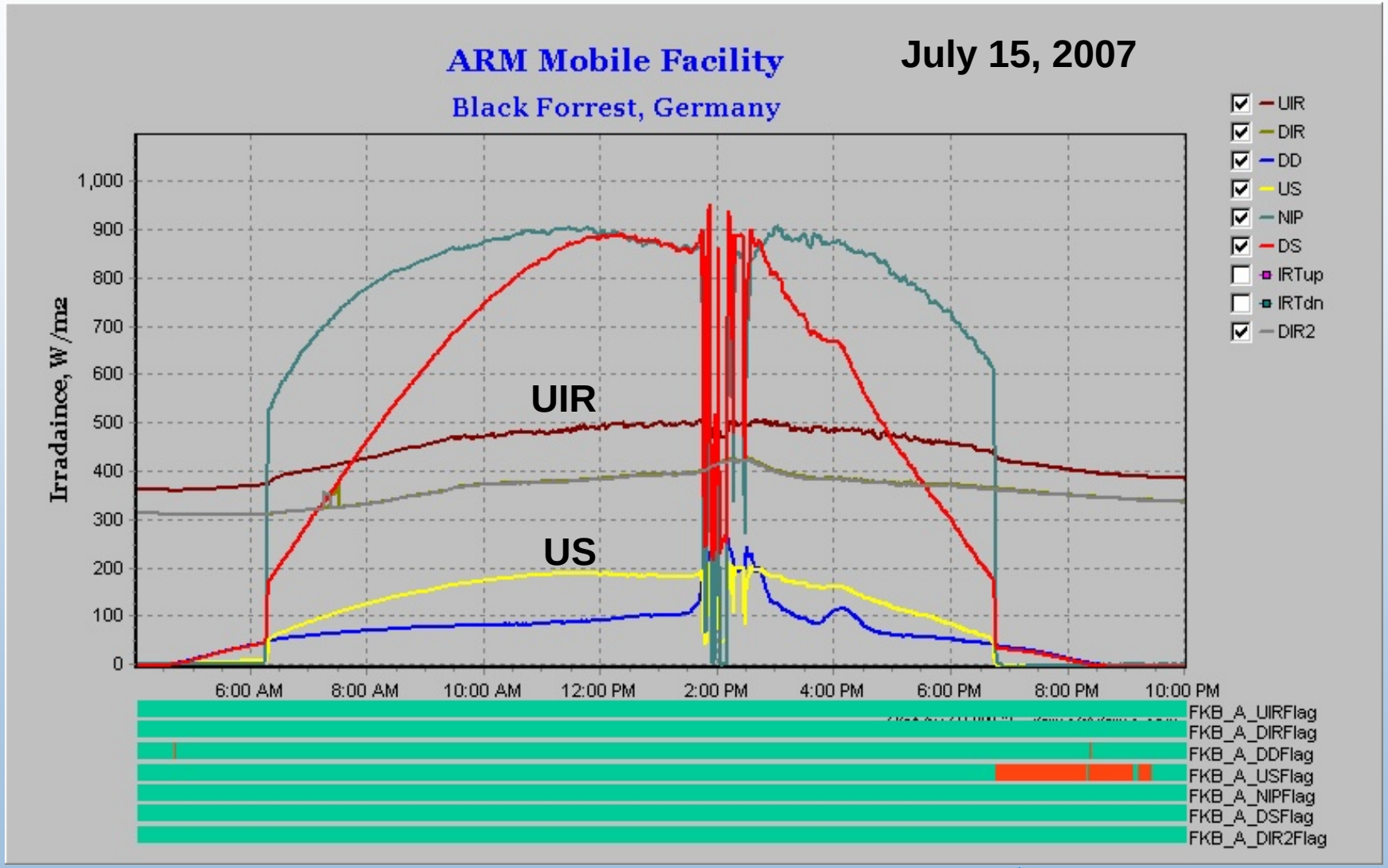
Warren et al. visits FKB…

BCR 01402: Move 7 m before on 10 m Tower

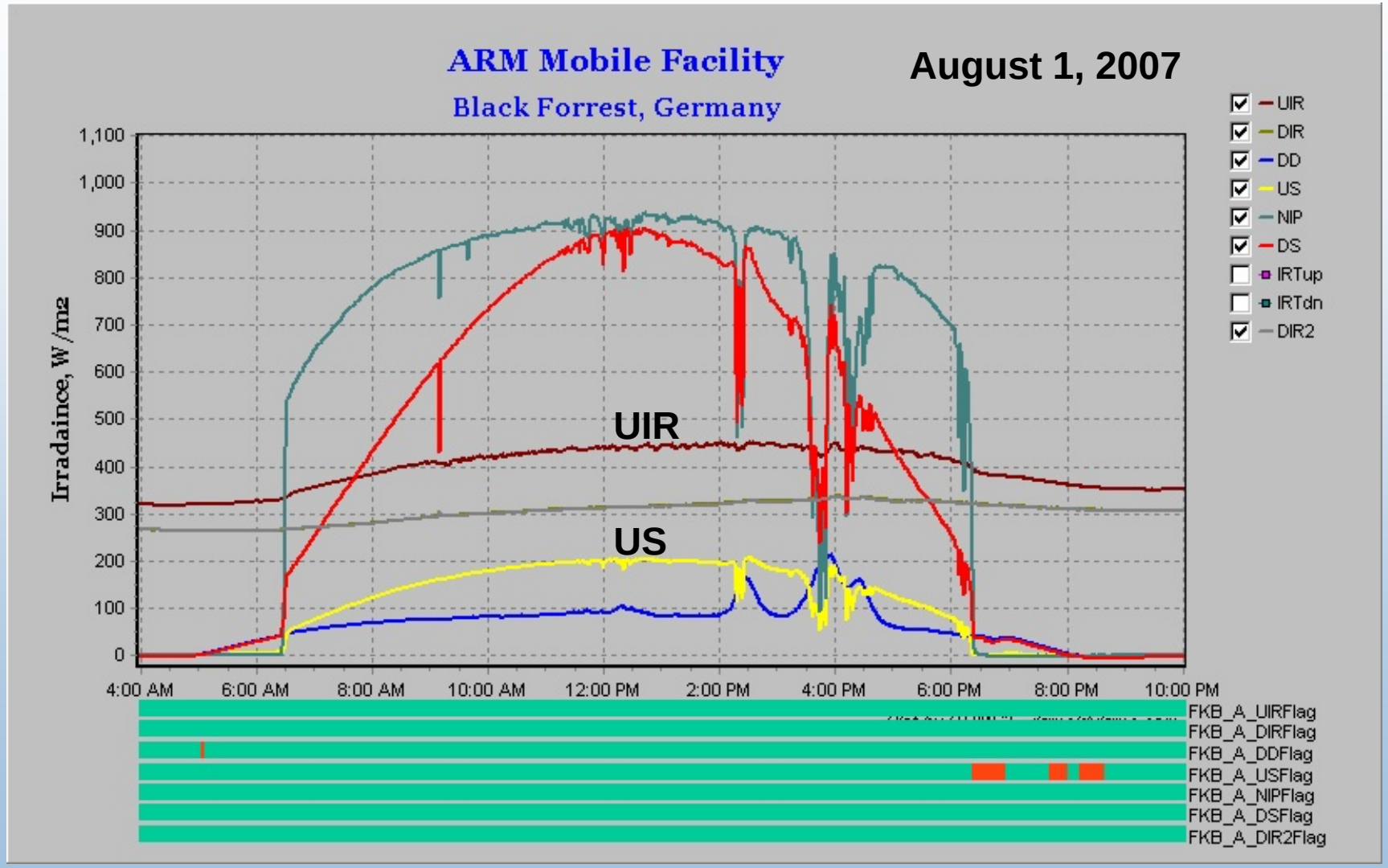
AMF Upwelling Irradiances



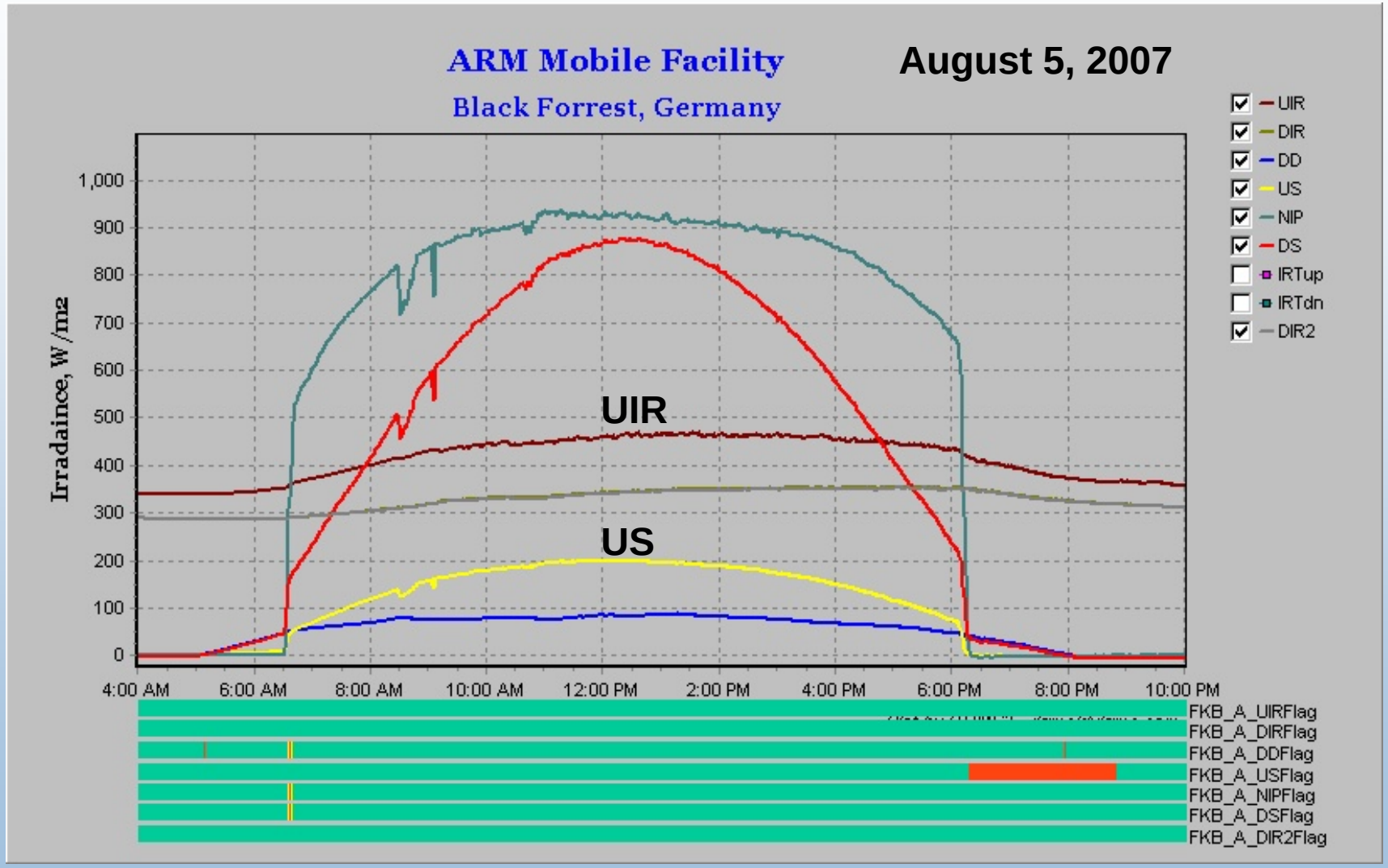
AMF Upwelling Irradiances



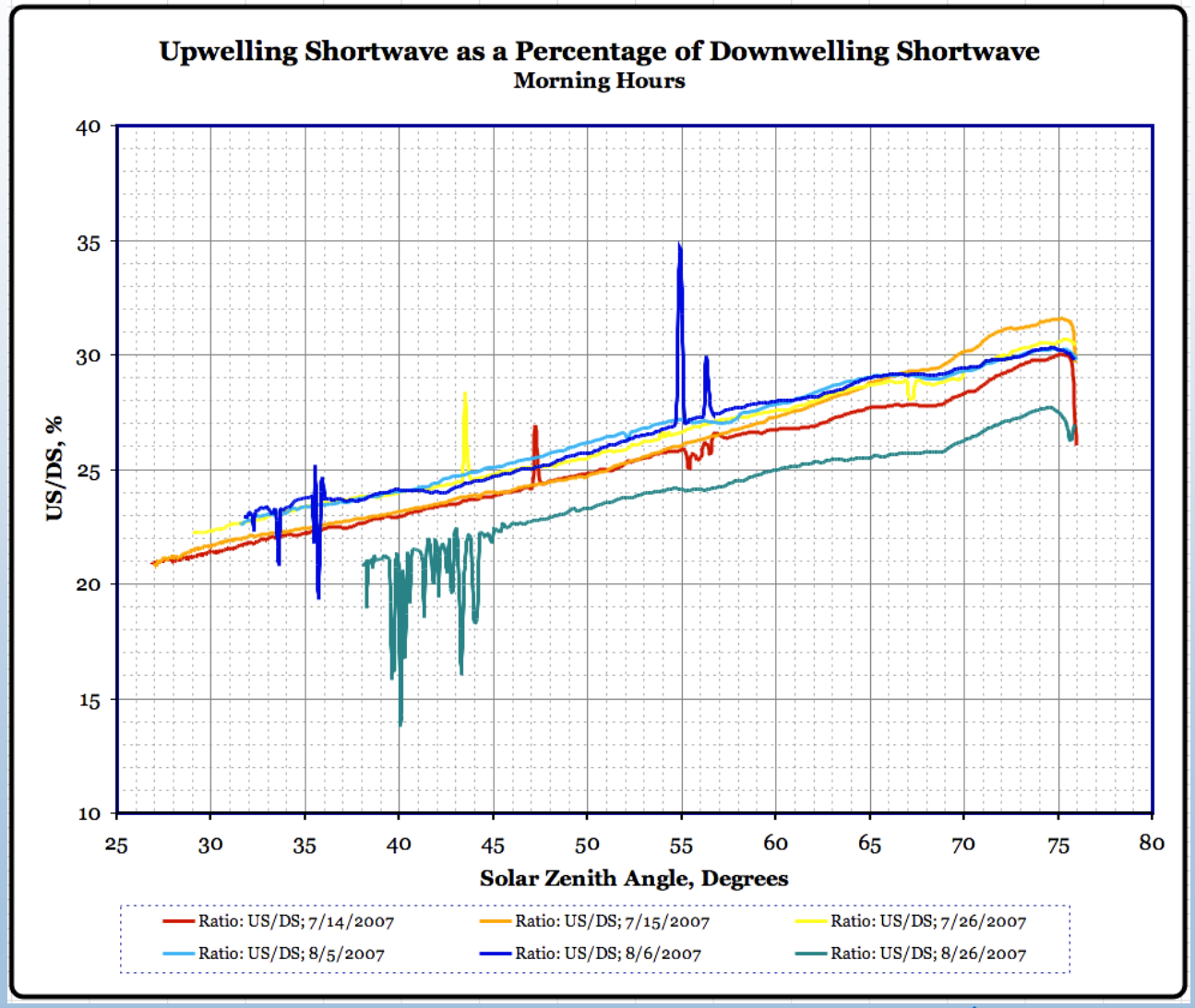
AMF Upwelling Irradiances



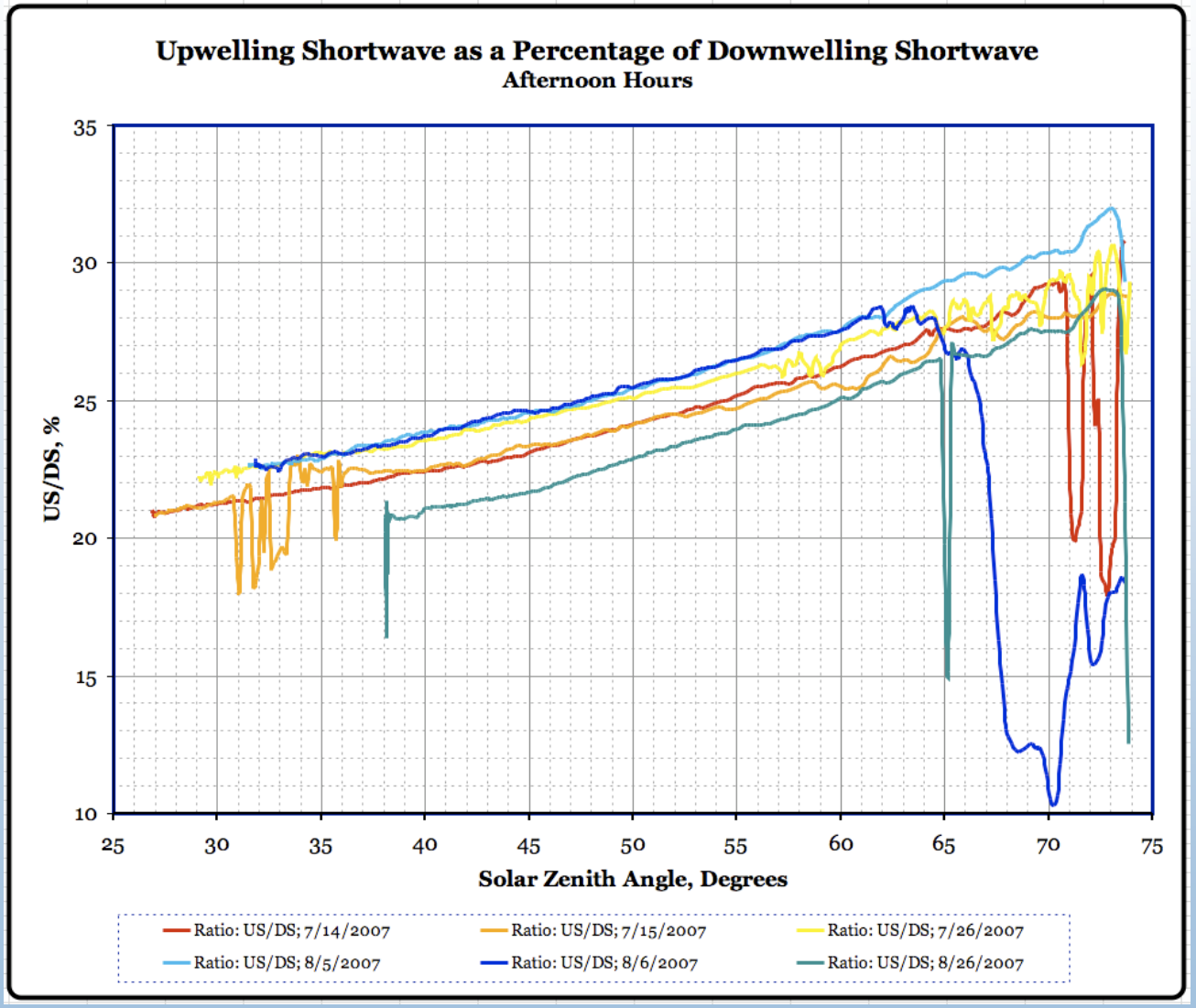
AMF Upwelling Irradiances



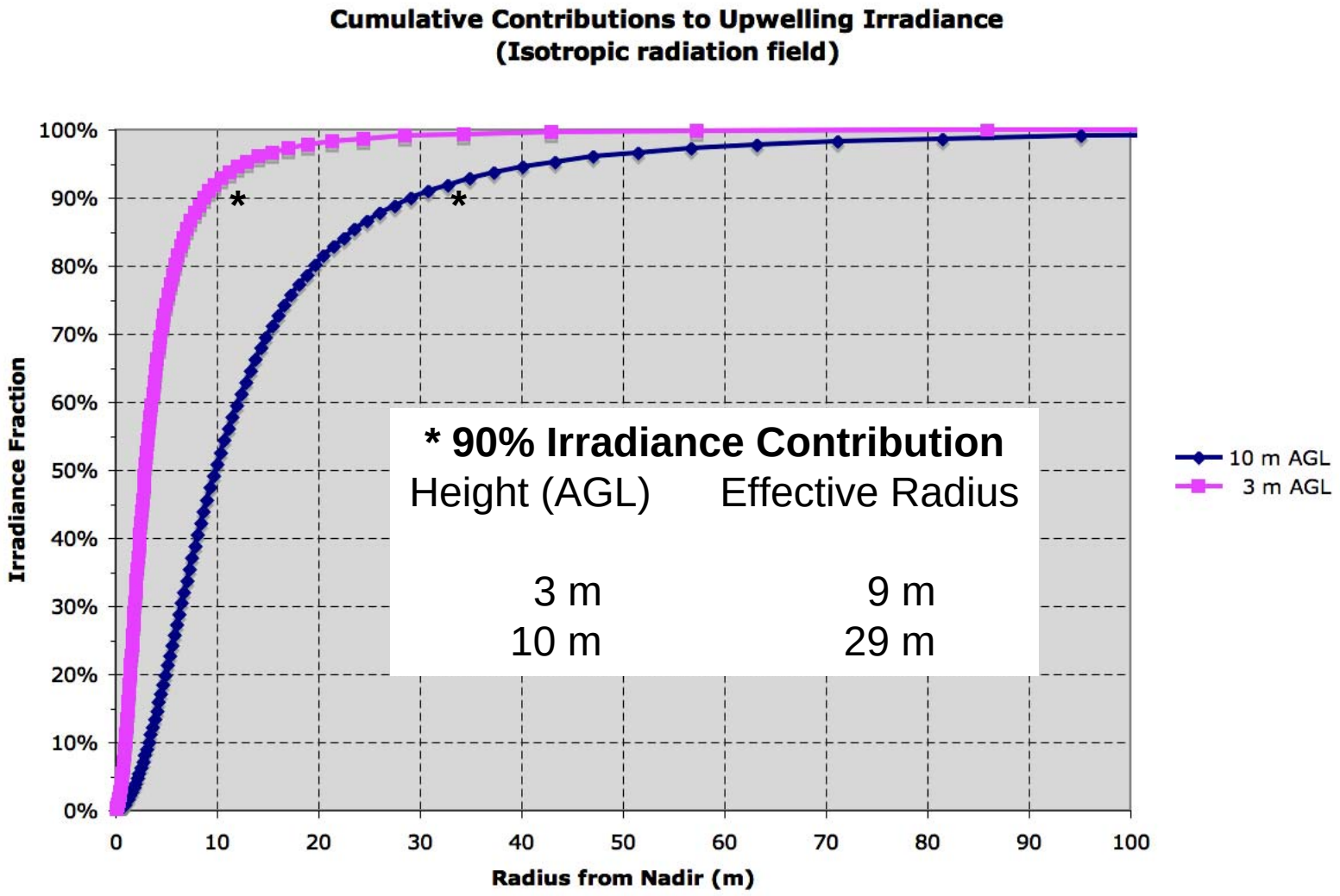
Surface Albedo (AM)



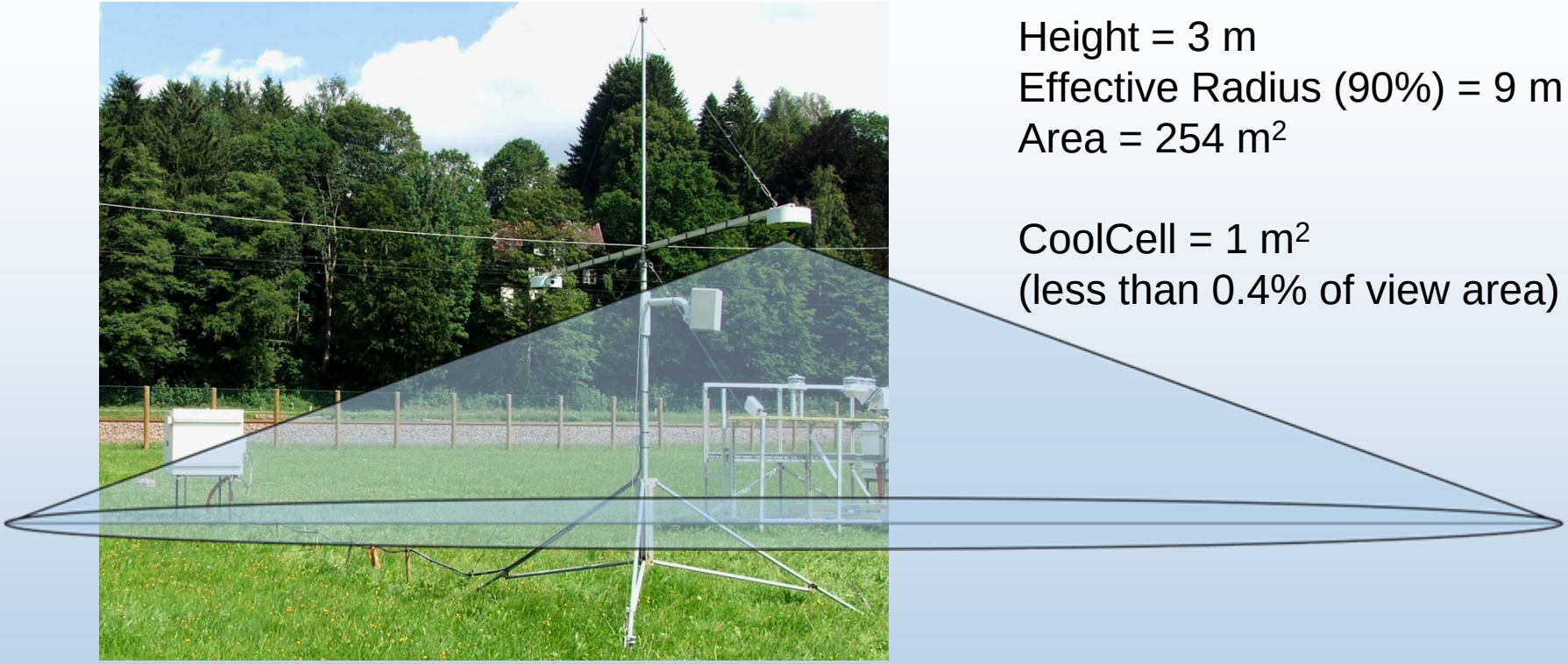
Surface Albedo (PM)



Radiometer View Factors



Radiometer Sensitivities



Height = 3 m
Effective Radius (90%) = 9 m
Area = 254 m^2

CoolCell = 1 m^2
(less than 0.4% of view area)

Pyranometer +/- 10 Wm^{-2} vs 0.4% of 200 Wm-2 (0.8 Wm^{-2})
Pyrgeometer +/- 15 Wm^{-2} vs 0.4% of 500 Wm-2 (2.0 Wm^{-2})

Conclusions

- ***No measureable effects*** of white CoolCell on AMF upwelling irradiances
- Moving AMF GNDRAD radiometers to 10m tower provides ***better area representation*** of upwelling irradiances
- Logistically ***more challenging*** at 10m
- ***Intercomparison*** of radiometers before deploying ancillary station(s)

Thank You!