## Joint Atmosphere (MODATML2)

The Joint Atmosphere Product code (PGE83) is now updated with changes to include the addition of the following arrays:

Cloud\_Effective\_Radius\_Difference Cloud\_Optical\_Thickness\_1621 Cloud\_Effective\_Radius\_1621 Cloud\_Optical\_Thickness\_Uncertainty Cloud\_Effective\_Radius\_Uncertainty Cloud\_Water\_Path\_Uncertainty Cloud\_Optical\_Thickness\_Uncertainty\_1621 Cloud\_Effective\_Radius\_Uncertainty\_1621 Cloud\_Water\_Path\_Uncertainty\_1621

As well as the addition of a second byte as a new second dimension of the Cloud\_Quality\_Assurance SDS array, whereby this new byte contains, counting up from 0 in order from least to most significant bits:

Bit 0: If MOD06 Cloud\_Multi\_Layer\_Flag is greater than 0 and less than 10 exclusive, then 1 else 0. In other words, a 1 indicates multi-layer clouds were detected, a 0 indicates no multi-layer cloud detection.
Bits 1-2: Bits 1 and 2 of MOD06 Cloud\_Quality\_Assurance\_1km byte 3 (1.6-2.1um cloud optical thickness quality assurance bits).
Bits 3-4: Bits 4 and 5 of MOD06 Cloud\_Quality\_Assurance\_1km byte 3 (1.6-2.1um cloud effective particle radius quality assurance bits).
Bits 5-7: Unused.

Further details and discrepancies with respect to previous versions can be found in the HISTORY.txt file of the baselined source code.