APPENDIX A—TERRA PRODUCT CONTRIBUTION TO SCIENCE FOCUS AREAS (AND PRODUCT MATURITY)

Table A-1: Terra product level, product maturity, each product's contribution to the National Objectives and Applications and Science Focus Areas and whether a product funding source is supported by a NASA ROSES funded science team member. Contribution code: "●" makes large contribution to the focus area; "■" makes small contribution to the focus area; "P" precursor product. Product maturity code: D = product in development; O = beta or provisional; 1 to 3 = Validation Stage: initial (1) to full validation (3). Product funding source: DA = product supported from Terra Project DA funds; R = product supported by ROSES-funded competitive award.

INSTRUMENT/Product	Level	National Objectives Applications	Contribution — Science Focus Area 1 Climate Variability and Change	2 Atmospheric Composition	3 Carbon Cycle and Ecosystems	4 Water and Energy Cycle	5 Weather	6 Earth Surface and Interior	Product Maturity	Product Funding Source
ASTER ASTER Reconstructed. unprocessed inst. data (AST01)	1A	P	P		P	P	P	P	3	DA
ASTER Registered radiance at sensor (AST03)	1B	■	■		■	■	■	●	3	DA
ASTER Surface radiance — VNIR, SWIR (AST09)	2	■	■		■	■		■	3	DA
ASTER Surface radiance — TIR (AST09T)	2	■	■		■	■	■	■	3	DA
ASTER Surface reflectance — VNIR, TIR (AST07)	2	■	■			■	■	■	3	DA
ASTER Surface kinetic temperature (AST08)	2	●	■			■	■	●	3	DA
ASTER Surface emissivity (AST05)	2	●						●	3	DA
ASTER Digital elevation model (AST14)	3	●				■		●	3	DA
ASTER Orthorectified radiance (AST14OTH)	3	●				■		●	3	DA
ASTER Ortho + DEM (AST14DMO)	3	●				■		●	3	DA
ASTER Global DEM (AST-GDEM)	3	●				■		●	3	DA
CERES CERES Bidirectional scans (BDS)	1B	P	P	P		P			3	DA
ERBE-like Instantaneous TOA estimates (ES-8)	2		●			■			3	DA
ERBE-like Monthly regional averages (ES-9)	3		●			■			3	DA
ERBE-like Monthly geographic averages (ES-4)	3		●			■			3	DA
CERES Single scan footprint TOA/surface fluxes and clouds (SSF)	2	●	●	■		●			3	DA
CERES Monthly gridded TOA/Surface fluxes and clouds (SFC)	3	■	■	■		■			3	DA
CERES TOA Fluxes and Clouds (SSF1deg -Day, -Month)	3	●	●	■		■			3	DA
CERES Clouds and radiative swath (CRS)	2	●	●	■		■			3	DA
CERES Monthly gridded radiative fluxes and clouds (FSW)	3	■	■	■		■			3	DA
CERES and GEO-Enhanced TOA/Within-Atmosphere/Surface Fluxes and Clouds (SYN1deg -3Hour, -Month, -M3hour)	3	●	●	■		●			3	DA
CERES ISCCP-D2like (-day, -nit, -geo)	3		●			■			3	DA

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O – beta or provisional;

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3 – Stage 3 Validation: Product accuracy has been assessed and the uncertainties in the product well established via independent measurements in a systematic and statistically robust way representing global conditions.

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INSTRUMENT/Product	Level	National Objectives, Applications	Contribution Science Focus Area						Product Maturity	Product Funding Source
			1 Climate Variability and Change	2 Atmospheric Composition	3 Carbon Cycle and Ecosystems	4 Water and Energy	5 Weather	6 Earth Surface and Interior		
MISR L1 Georectified radiance product (MI1B2E, MI1B2T)	1	P	■	P	P	■	P	■	3	DA
MISR L2 Stereo product (MIL2TCST): heights, winds	2	■	●	●		●	■		3, 2	DA
MISR L2 Cloud product (MIL2TCSP) cloud height, cloud –tracked winds	2	■	●	●		●	●		3, 1	DA
MISR L2 Cloud masks and cloud classifiers product (MIRCCM, MIL-2TCST, MIL2TCCL): radiometric, stereo, angular signature	2	P	●	■		●	P		3, 2	DA
MISR L2 Top-of-atmo albedo product (MIL2TCAL), BRF, albedo	2		●						3, 1	DA
MISR L2 Aerosol prod. (MIL2ASAE): optical depth, partcl. properties	2	■	●	●					3, 2	DA
MISR L2 Surface product (MIL2TCLS): albedos/BRFs, LAI	2				●	●			3, 2	DA
MISR L3 Global radiation and climate, cloud, aerosol, and surface prod.	3		●	●	■	●			3, 2	DA
MISR L3 Plume height climatology product	3		■	●	P				2	DA
MISR L3 Cloud fraction by altitude product	3		●	■		●			2	DA
MISR L3 Cloud motion vector product	3		●	■		●			3	DA
MISR L3 Joint Aerosol product	3	■	●	●					3	DA
MODIS Radiance counts (MOD01)	1A	■	■	■	■	■	■	■	3	DA
MODIS Calibrated and geolocated radiances (MOD02)	1B	P	P	P	P	P	P	P	3	DA
MODIS Geolocation data set (MOD03)	1	P	P	P	P	P	P	P	3	DA
MODIS Aerosol product (MOD04)	2	●	●	●	■	■	■		2	R
MODIS Total precipitable water (MOD05)	2	■	●	■	●	■	●		2	R
MODIS Cloud product (MOD06)	2	●	●	■	■	■	■		2	R
MODIS Atmospheric profiles (MOD07)	2	●	●	●	■	■	●		2	R
MODIS Atmosphere gridded product (MOD08)	3	●	●	●	■	●	●		2	R
MODIS Atmosphere joint product (MODATML2)	2	●	●	■	■	●	●		2	R
MODIS Cloud mask (MOD35)	2	●	●	●	●	●	●		2	R
MODIS Surface reflectance (MOD09)	2, 3	●	●	■	●	●	■	■	2	R
MODIS Land surface temperature and emissivity (MOD11)	2, 3	●	●	■	●	●	●	■	2	R
MODIS Land cover and dynamics (MOD12)	3	●	●	■	●	●	■	■	2, 1	R
MODIS Vegetation indices (NDVI and EVI) (MOD13)	3	●	●	■	●	●	■	■	2	R
MODIS Fire and thermal anomalies (MOD14)	2, 3	●	●	●	●	■	■	■	3	R
MODIS LAI and fraction of photosynthetically active radiation (MOD15)	3	●	●	■	●	●	■	■	3	R
MODIS Evapotranspiration (MOD16)	3	●	●	■	●	●	●		0	R
MODIS Gross primary productivity/Net primary productivity (MOD17)	4	●	■	■	●	■	■		2	R
MODIS MAIAC Product (MOD19)	3	●	●	●	●	●	■	■		R
MODIS Land Surface temperature and emissivity (MOD21)	2, 3	●	●	■	●	●	●	■	0	R
MODIS BRDF/albedo model parameters (MCD43)	3	●	●	■	●	●	■	●	2	R
MODIS Vegetation continuous fields (MOD44)	3	●	■	■	●	■	■		1	R
MODIS Burned area product (MCD45)	3	●	■	●	■	■	■		2	R

Appendix A–2

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PRODUCT/Instrument	Level	National Objectives Applications	Science Focus Area 1 — Climate Variability and Change	2 — Atmospheric Composition	3 — Carbon Cycle and Ecosystems	4 — Water and Energy	5 — Weather	6 — Earth Surface and Interior	Product Maturity	Product Funding Source
MODIS — MODIS Snow cover (MOD10)	2, 3	●	●	■	■	●	●	■	2	R
MODIS Sea ice cover and ice surface temperature (MOD29)	2, 3	●	●	■		■	●		2	R
MODIS Ocean — MODIS Sea surface temperature (MOD28)	2, 3	●	●	●	●		●	■	3	R
MODIS Remote sensing reflectance	2, 3	●			●				2	R
MODIS Sub-surface chlorophyll-a concentration	2, 3	●			●				2	R
MODIS diffuse attenuation at 490 nm	2, 3	■			■				2	R
MODIS Aerosol optical thickness (for ocean color atmo. correction)	2, 3	■			■				2	R
MODIS Aerosol Ångström exponent	2, 3	■			■				2	R
MODIS Particulate organic carbon	2, 3	■			■				1	R
MODIS Particulate inorganic carbon	2, 3	■			■				1	R
MODIS Fluorescence line height	2, 3	■			■				0	R
MODIS Instantaneous photosynthetically available radiation	2, 3	■			■				0	R
MODIS Daily mean photosynthetically available radiation	2, 3	■			■				0	R
Other MODIS — MODIS Polar winds	3	●	●	●	■		●		3	R
MODIS Disturbance index (DI)	3	●			●		■	■	1	R
MOPITT — MOPITT Calibrated radiances and geolocation (MOP01)	1	P		P	P				3	DA
MOPITT CO profile and total column (TIR) (MOP02)	2	■		●	■				3	DA
MOPITT CO profile and total column (NIR)	2	■		●	■				2	DA
MOPITT CO profile and total column (NIR/TIR)	2	■		●	■				2	DA
MOPITT CO profile and total column (TIR) - Daily and Monthly Mean	3	■		●	■				3	DA
MOPITT CO profile and total column (NIR) - Daily and Monthly Mean	3	■		●	■				2	DA
MOPITT CO profile and total column (NIR/TIR) - Daily and Monthly Mean	3	■		●	■				2	DA

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