Table 1. Summary of publicly available, quasi-operational, quasi-global precipitation estimates from a single sensor type. Where appropriate, the algorithms applied to the individual input data sets are mentioned. The TMI GPROF and PR are also available as separate products from the GDAAC. Shading indicates data sets not yet released. "Latency" gives the typical interval between the end of the observational period and release of the product. "Features" lists URL features beyond documentation and data.

Algorithm	Input data	Space/time scales	Areal coverage/start date	Update frequency	Latency	Archive location, features
GPROF	SSM/I	0.5˚/orbit segments	Global – 70°N-S/July 1987	1 mon.	1 pentad	GDAAC (1)
	SSM/I	0.25˚/orbit segments	Global – 70°N-S/September 2002	3 hr	3 hr	GDAAC (3)
GPROF (3G68)	TMI	0.5˚/1-hr	Global – 37°N-S/December 1997	1 day	4 days	NASA/GSFC TSDIS (1)
GPI	geo-IR, LEO-IR	2.5°/pentad	Global – 40˚N-S/ January 1986 – March 1997	N/A	N/A	NOAA CPC (1)
	geo-IR, leo-IR	1°/3-hr	Global – 40˚N-S/October 1996	1 mon.	1 week	NOAA CPC (1)
HOAPS-G[1]	SSM/I	0.5˚/pentad, mon, climo. mon.	Global ice-free ocean/ July 1987 – December 2002	On new version	On new version	HOAPS + images
HOAPS-S[1]	SSM/I	SSM/I footprints/ orbit segments	Global ice-free ocean/ July 1987 – December 2002	On new version	On new version	HOAPS + images
HOAPS-C[1]	SSM/I	1°/12-hr	Global ice-free ocean/ July 1987 – December 2002	1 year	~6 mon.	HOAPS + images
NESDIS AMSU[2]	AMSU	20km/orbits	Global/January 2000	orbit	3 hr	CLASS + images
NESDIS SSM/I Global Monthly	SSM/I	1.0˚, 2.5˚/mon.	Global/July 1987	1 mon	5 days	NESDIS ORA + images
OPI	LEO-IR	2.5˚/1-day	Global/January 1979	1 day	1 day	NOAA CPC (2)
PR Precip (3G68)	PR	0.5˚/1-day	Global – 37°N-S/December 1997	1 day	4 days	NASA/GSFC TSDIS (1)
Wilheit-Chang Statistical	SSM/I	2.5°/mon.	Global ocean – 60°N-S/July 1987	1 mon.	1 mon.	GMU
Wilheit-Chang Statistical (3A11)	TMI	5°/mon.	Global ocean – 40°N-S/ January 1998	1 mon.	1 week	GDAAC (2)

1 Currently Version II; Version III due in January 2007, which will be a re-process and extension to December 2005. Planned operationalization in 2008.

2 Pentad and monthly estimates available on request to Ralph.R.Ferraro@noaa.gov .

Table 2. Summary of publicly available, quasi-operational, quasi-global precipitation estimates that are produced by combining input data from several satellite sensor types. Many of the input data sets are pre-processed into precipitation estimates. Shading indicates data sets not yet released. The TCI is also available as a separate Level 2 (satellite swath coordinates) product from the GDAAC. "Latency" gives the typical interval between the end of the observational period and release of the product. "Features" lists URL features beyond documentation and data.

Algorithm	**Input data**	**Space/time scales**	**Areal coverage/ start date**	**Update frequency**	**Latency**	**Archive location, features**
GSMaP-MWR GSMaP-MWR-RT	TMI, AMSR, AMSR-E, SSM/I	0.1˚/6-hr	Global – 60°N-S/1998-2005	?	?	Osaka + images
GSMaP-MV GSMaP-MV-RT	TMI, AMSR, AMSR-E, SSM/I, geo-IR	0.1˚/1-hr	Global – 60°N-S/?	?	?	Osaka + images
Hydro-Estimator	GEO-IR	4-km/15-min	Global – 60°N-S/ last few months; CONUS/April 2003	By image	15 min	NESDIS
NOAA CPCP CMORPH	TMI, AMSR-E, SSM/I, AMSU, GEO-IR	8-km/1-hr	Global – 60°N-S/ December 2002	1 hr	3 hr	NOAA CPC (3)
NRL Blend	PR, TMI, SSM/I, AMSU-B, GEO-IR	0.1˚/3-,6-,12-, 24-hr; 1- through 10-day	Global – 60˚N-S/July 2000	1 hr; 1 day	3 hr	NRL Monterey (r.t.), CICS (archive) + images
PERSIANN	TMI, SSM/I, GEO-IR	0.25°/6-hr	Global – 50°N-S/March 2000	6 hr	2 day	U.C. Irvine
PMIR	SSM/I, GEO-IR	10-km/30-min	Global – 60°N-S/2001	1 day	3 day	U. of Birmingham (1) + images
TCI (3G68)	PR, TMI	0.5˚/1-hr	Global – 35°N-S/ December 1997	1 day	4 day	NASA/GSFC TSDIS (1)
TOVS	HIRS, MSU	1°/1-day asc./desc.	Global/Jan 1979 – April 2005	N/A	N/A	NASA/GSFC Code 613
AIRS	HSB, AMSU	1°/1-day asc./desc.	Global/September 2002	1 day	1 day	NASA/GSFC Code 613
TRMM Real-Time HQ (3B40RT)	TMI, GPROF-SSM/I	0.25˚/3-hr	Global – 70˚N-S/29 January 2002	3 hr	6 hr	NASA/GSFC TSDIS (2)
TRMM Real-Time VAR (3B41RT)	HQ, GEO-IR	0.25˚/1-hr	Global – 50˚N-S/29 January 2002	1 hr	6 hr	NASA/GSFC TSDIS (2)
TRMM Real-Time MPA (3B42RT)	HQ, VAR	0.25˚/3-hr	Global – 50˚N-S/29 January 2002	3 hr	6 hr	NASA/GSFC TSDIS (2)

Table 3. Summary of publicly available, quasi-operational, quasi-global precipitation estimates that are produced by combining input data from several sensor types, including rain gauges. Many of the input data sets are pre-processed into precipitation estimates. "Latency" gives the typical interval between the end of the observational period and release of the product. "Features" lists URL features beyond documentation and data.

Algorithm	**Input data**	**Space/time scales**	**Areal coverage/ start date**	**Update frequency**	**Latency**	**Archive location, features**
CAMS/OPI	CMAP-OPI, gauge	2.5˚/daily	Global/January 1979	Monthly	6 hours	NOAA CPC (2)
CMAP	OPI, SSM/I, GPI, MSU, gauge, model	2.5˚/monthly, pentad	Global/January 1979	Seasonal	3 months	NOAA CPC (6)
GPCP Version 2 SG	*1/79-6/87, 12/87*: GPCP-OPI, gauge *7/87-present except 12/87*: SSM/I, GEO-, LEO-IR, gauge, TOVS, AIRS	2.5˚/monthly	Global/January 1979	Monthly	3 months	WDC-A + images
GPCP pentad	OPI, SSM/I, GPI, MSU (*1/79-12/94*), gauge, GPCP SG	2.5˚/5-day	Global/January 1979	Seasonal	3 months	WDC-A
GPCP 1DD	SSM/I, GEO-, LEO-IR, TOVS, AIRS, GPCP SG	1˚/daily	Global/October 1996	Monthly	3 months	WDC-A + images
PREC	CMAP-OPI (1979-1998 for development of oceanic EOFs), gauge	2.5˚/monthly (1°,0.5° land)	75°N-60°S/ January 1948	Monthly	10 days	NOAA CPC (4)
TRMM Plus Other Satellites (3B42 V.6)	TCI, TMI, AMSR-E, SSM/I, AMSU-B, GEO-IR, TRMM 3B43	0.25˚/3-hourly	Global – 50°N-S/ January 1998	Monthly	1 week	GDAAC (2)
TRMM Plus Other Data (3B43 V.6)	TCI, TMI, AMSR-E, SSM/I, AMSU-B, GEO-IR, gauge	0.25˚/monthly	Global – 50°N-S/ January 1998	Monthly	1 week	GDAAC (2)

Active Sites Hosting and/or Linking to Multiple Global Precipitation Data Sets

IPWG Australia Validation Site	BOM
IPWG Europe Validation Site	U. of Birmingham (2)
IPWG U.S. Validation Site	NOAA CPC (5)
IPWG Validation Archive	CICS

Active Sites Hosting Interactive Analysis Engines

IPWG Validation Archive	CICS
GDISC TOVAS	TOVAS

ARCHIVE LOCATIONS REFERENCED IN THE TABLES

BOM	http://www.bom.gov/au/bmrc/SatRainVal/dailyval_dev.html
CICS	ftp://cics.umd.edu/pub/DATA/Validation/
CLASS	http://www.class.nooa.gov
	http://www.orbit.nesdis.noaa.gov/corp/scsb/mspps/
GDAAC (1)	ftp://lake.nascom.nasa.gov/data/TRMM/Ancillary/ssmi/
GDAAC (2)	http://disc.sci.gsfc.nasa.gov/data/datapool/TRMM/01_Data_Products/02_Gridded/index.html
GDAAC (3)	http://disc.gsfc.nasa.gov/data/datapool/TRMM_DP/01_Data_Products/06_Ancillary/02_GPROF6/index.html
GMU	http://gpcp-pspdc.gmu.edu/
HOAPS	http://hoaps.org
NASA/GSFC Code 613	Joel.Susskind-1@nasa.gov
NASA/GSFC TSDIS (1)	ftp://trmmopen.gsfc.nasa.gov/pub/3G68
NASA/GSFC TSDIS (2)	ftp://trmmopen.gsfc.nasa.gov/pub/merged
NESDIS	ftp://ftp.orbit.nesdis.noaa.gov/pub/smcd/emb/f_f/hydroest/world/world/archive (Global)
	ftp://www.orbit.nesdis.noaa.gov/pub/smcd/emb/f_f/validation/Archive/Grids (CONUS)
NESDIS ORA	http://lwf.ncdc.noaa.gov/oa/satellite/ssmi/ssmiproducts.html
	http://cics.umd.edu/~yin/SSMI/main.html (images)
NOAA CPC (1)	Yelena.Yarosh@noaa.gov
NOAA CPC (2)	ftp://ftp.cpc.ncep.noaa.gov/precip/data-req/cams_opi_v0208/
NOAA CPC (3)	http://www.cpc.ncep.noaa.gov/products/janowiak/MW-precip_index.html
NOAA CPC (4)	ftp://ftp.cpc.ncep.noaa.gov/precip/50yr/land_ocean
NOAA CPC (5)	http://www.cpc.ncep.noaa.gov/products/janowiak/us_web.shtml
NOAA CPC (6)	ftp://ftp.cpc.ncep.noaa.gov/precip/cmap/monthly (monthly)
	ftp://ftp.cpc.ncep.noaa.gov/precip/cmap/pentad (pentad)
NRL Monterey	ftp://ftp.nrlmry.navy.mil/pub/receive/turk/global_rain
Osaka	http://www.radar.aero.osakafu-u.ac.jp/~gsmap/IPWG/dailyval.html
	http://www.radar.aero.osakafu-u.ac.jp/~gsmap/ (images)
TOVAS	http://lake.nascom.nasa.gov/tovas/
U. of Birmingham (1)	http://kermit.bham.ac.uk/~kidd/matched/matched.html
U. of Birmingham (2)	http://kermit.bham.ac.uk/~ipwgeu/
U.C. Irvine	http://hydis8.eng.uci.edu/persiann/index.html
WDC-A	http://www.ncdc.noaa.gov/oa/wmo/wdcamet-ncdc.html
	http://precip.gsfc.nasa.gov/rain_pages/rainrate_monthly_version2.html (monthly images)
	http://precip.gsfc.nasa.gov/rain_pages/daily_choice.html (daily images)