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Anhang: Tabelle I (Verzeichnis der Satelliten, Bahnparameter und Sensoren)

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TOMLINSON, R.F. (Ed.), 1972: Geographical Data Handling.
IGU Commission on Geographical Data Sensing and Processing for the UNESCO/IGU Sec. Symp. on Geogr. Inf. Systems.
Ottawa.

Data on American earth-sensing satellites

Designation	Launch	End of operation (or # of orbits)	Perigee (km)	Apogee (km)	Inclination (°C)	Period (min)	Photogr. cameras	Image tubes	Optical- mech. scanners	Other sensors
1) <u>TIROS</u> (Television-Infrared Observation Satellite) series										
Purpose: Weather observation										
TIROS 1	IV-1-60	VI-19-60	692	753	48	99		1 WAV 1 NAV		
TIROS 2	XI-23-60	II-1-61	623	727	48	99		id.	1 MRIR	1 LRIR
TIROS 3	VII-12-61	X-30-61	742	814	48	100		2 WAV	id.	1 LRIR 1 WFR
TIROS 4	II-8-62	VI-12-62	710	845	48	100		1 WAV 1 MAV	id.	1 LRIR 1 WFR
TIROS 5	VI-19-62	V-5-63	590	972	58	100		id.		
TIROS 6	IX-18-62	X-11-63	681	714	58	99		id.		
TIROS 7	VI-19-63	II-3-66	620	645	58	97		2 WAV	1 MRIR	1 WFR
TIROS 8	XII-21-63	I-22-65	692	761	58	99		1 APT 1 WAV		
TIROS 9	I-22-65	II-15-67	700	2,578	96	119		2 WAV		
TIROS 10	VII-2-65	VI-1-66	737	832	99	101		id.		
2) <u>ESSA</u> (Environmental Survey Satellite) series (= TOS = TIROS Operational Satellite)										
Purpose: Weather observation										
ESSA 1	II-3-66	V-8-67	695	838	98	100		2 WAV		
ESSA 2	II-28-66	X-16-70	1,357	1,424	101	114		2 APT		
ESSA 3	X-2-66	X-9-68	1,384	1,485	101	114		2 AVCS		1 LRIR 1 WFR
ESSA 4	I-26-67	XII-6-67	1,323	1,438	102	113		2 APT		
ESSA 5	IV-20-67	II-20-70	1,352	1,421	102	114		2 AVCS		1 LRIR 1 WFR
ESSA 6	XI-10-67	XI-4-69	1,410	1,488	102	115		2 APT		
ESSA 7	VIII-16-68	VII-19-69	1,432	1,475	102	115		2 AVCS		1 LRIR 1 WFR

Designation	Launch	End of operation (or # of orbits)	Perigee (km)	Apogee (km)	Inclination (°C)	Period (min)	Photogr. cameras	Image tubes	Optical-mech. scanner	Other sensors
ESSA 8	XII-15-68		1,417	1,464	102	115		2 APT		
ESSA 9	II-26-69		1,636	1,747	102	115		2 AVCS		1 LRIR 1 WFR
3) <u>Nimbus series</u>										
Purpose: Weather observation										
Nimbus 1	VIII-28-64	IX-22-64	423	932	99	99		3 AVCS 1 APT	1 HRIR	
Nimbus 2	V-15-66	XI-15-66	1,095	1,179	100	108		id.	1 HRIR 1 MRIR	
Nimbus 3	IV-14-69	II-4-70	1,068	1,131	99	107		1 IDCS/ DRID	1 HRIR/ DRIR	1 IRIS, 1 SIRS, 1 MUSE
Nimbus 4	IV-4-70		1,086	1,095	100	107		id.	1 MRIR 1 THIR/ DRIR	id. + 1 FWS, 1 SCR
Nimbus E-H	1972-								1 SCMR	
4) <u>ITOS</u> (= Improved TIROS Operational Satellite) series										
Purpose: Weather observation										
ITOS 1 (TIROS M)	I-23-70		1,432	1,478	102	115		2 AVCS 2 APT	1 SR/ DRIR	1 FPR
NOAA 1 (ITOS A)	XII-11-70		1,422	1,472	102	115		id.	id.	id.
ITOS B	failed									
ITOS C-G	1972-1976									

Approximate scale, ground coverage and ground resolution for image tube imagery obtained from American satellites

Spacecraft	Image tube	Original scale (at tube face)	Ground coverage (km x km)	Ground resolution at subsatellite point (km per line pair)	
				Nominal	Effective
TIROS	Vidicon WA	1:190 million	1200 x 1200	2.5 - 3	3.5 - 4.2
	Vidicon MA	1:115 million	725 x 725	2.0	2.8
	Vidicon NA	1:19 million	120 x 120	0.3 - 0.8	0.4 - 1.1
ESSA	AVCS, APT	1:220 million	2800 x 2800	6	8.5
Nimbus 1	AVCS (Triad)	1:25 - 1:50 million	300 x 1200 to 650 x 3000	0.66 - 1.44	0.93 - 2.0
	APT	1:70 - 1:150 million	850 x 850 to 1950 x 1950	1.6 - 3.6	2.2 - 5.1
Nimbus 2	AVCS (Triad)	1:60 million	750 x 3700	1.84	2.6
	APT	1:175 million	2200 x 2200	4.4	6.2
Nimbus 3, 4	IDCS	1:175 million	2700 x 2700	6.6	9.3
ITOS	AVCS	1:250 million	3150 x 3150	6.0 - 11.4	8.5 - 16.1
	APT	1:250 million	2410 x 3150	6.0 - 11.4	8.5 - 16.1
ATS 3	IDCS	Variable, 1:7000 million at subpoint	50° N,S,W & E of subpoint	12.8 - 16.0	18.0 - 22.5
ERTS A, B	RBV, Green & Red	1:7.3 million	185 x 185	0.088	0.124
	RBV, IR		185 x 185	0.111	0.156

Sources: J.A. Leese, A.L. Booth & F.A. Godshall 1970; R.R. Sabatini, G.A. Rabchevsky & J.E. Sissala 1971; Colvocoresses 1970.

Technical data on image tubes used on American satellites

Spacecraft	Tube type	Frame size (cm)	Focal length (mm)	Diag. FOV (deg)	Shutter speed (sec)	Lines per frame	Read-out time (sec)	Spectral sensitivity (nm)
TIROS 1 - 10 + ESSA 1	Vidicon WA	0.62	5	104	1.5	500	2	550-750
	Vidicon MA	0.63	5.7	80	1.5	500	2	550-750
	Vidicon NA	0.63	40	12.7	1.5	500	2	550-750
ESSA 3, 5, 7, 9 + ITOS	AVCS	1.27	5.7	108	40	800	6.5	550-750
Nimbus 1, 2	AVCS (Triad)	1.27	18	46	40	800	6.5	550-750
TIROS 8 + ESSA 2, 4, 6, 8 + ITOS + Nimbus 1, 2	APT	1.27	5.7	108	40	800 (600)*	200 (150)*	550-750
Nimbus 3, 4	IDCS	1.27	5.7	108	No shutter	800	200	450-650
ATS 3	IDCS	1.8	4.9	20.5 (lens)	No shutter	1328	125	450-650
ERTS A, B	RBV	2.54	126	16	8, 12, 16	4200	3.5 each camera	1) 475-575 2) 580-680 3) 690-830

* Only 600 lines read on ITOS

Sources: J.A. Leese, A.L. Booth & F.A. Godshall, 1970; NASA Goddard Space Flight Center: Nimbus User's Guides & ATS Meteorological Data Catalogs; ITOS (U.S. Govnt, Printing Office, 1969)

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