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TO:

DATE: 7 July 1976

SUBJECT: SIGINT Chronology

FROM:

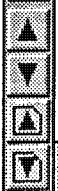
The attached document "SIGINT Chronology", is being issued to replace BIF-107W-40004-76 of the same title. The earlier copy was underclassified and had several omissions and errors which this re-issue corrects. Please destroy the earlier copy.

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To: []

Date: 22 June 1976

Subject: SIGINT Chronology

From: []

The following summary lists the overhead SIGINT missions in chronological order. The tabulation below provides some supplementary information:

Mission No.	Program No(s) and Name	MSG. Series	NSA Name
70XX	162/206 Vulnerability Monitoring Packages (obsolete)		
710X	770C/688 POPPY (NRL)	Reindeer	[]
[]	[]	Reindeer	[]
71XX	698BK/770A STRAWMAN	Reindeer	[]
72XX	Old Aft Rack, 770A Secondaries	Reindeer	[]
73XX	P-11/770B/989 Piggybacks	[]	[]
[]	[]	--	--

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Under "RF Range" in the following listing, a single dash indicates solid coverage and a double dash indicates that there were gaps in coverage. Under P/L contractor, NRL is the Naval Research Lab, AIL is the Airborne Instrument Lab, SEL is the Stanford University Electronics Lab, EDL is the Sylvania Electromagnetic Development Lab, HRB is the Haller/Raymond/Brown Division of Singer, ATI is Applied Technology Industries (now a division of Itek), LTV is Ling Tempco Vaught (now E-Systems), ESL is Electromagnetic Systems Lab (an EDL break-away), TRW is Thompson Ramo Wooldridge, HAC is Hughes Aircraft and MOT. is Motorola. Under Target, GS is general search, ABM is anti-ballistic missile, GCI is ground controlled intercept, EOB is electronic order of battle, EW is early warning, TLM is telemetry, H/S is horizon sensor, D/F is direction finding, R is re-entry and TI is technical intelligence. The vulnerability missions are included only through 1964. The first (NRL) launch was a single ball predecessor to the POPPY system with the cover name "Solrad" (solar radiation), the NRL name "Dyna" and the USAF name "Greb."

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Missior No.	Name	Ride (Veh. No.)	RF Range (GHz)	Launch-Death	Life (days)	P/L Contr.	Target/Other
<u>1960 (7 Missions)</u>							
	Dyno I (Greb I, Solrad I)	Transit 2A (Thor-Able Star)	2.5-3.25	22 Jun-14 Sep	84	NRL	GS-330 x 565 nm, 66.7°
	Soctop I	Discoverer 13	2.5-3.2	10 Aug-15 Oct	66	AIL	Vulnerability
	Soctop II	Discoverer 15	.3-.9/ 2.5-3.2	13-Sep-18 Oct	35	AIL	Vulnerability
	EI (698BK)	Samos I	2-4/8-10	11 Oct	0	AIL	Agema Failure
	Soctop IIA	Discoverer 16	.3-.9/ 2.5-3.2	26 Oct	0	AIL	Booster Failure
	Soctop III	Discoverer 17	1-9	12 Nov-29 Dec	47	AIL	Vulnerability
	Dyno (Greb)	Transit 3A	2.5-3.25	30 Nov	0	NRL	Booster Failure
<u>1961 (15 Missions)</u>							
	698 BK I	Samos 2	2.6-3.2/ 9-10	31 Jan	0	AIL	GS-Antenna Failed
	Dyno II (Lofti)	Transit 3B	2.5-3.25	21 Feb-31 Mar	37	NRL	GS-Failed to Separate
	Soctop V	Discoverer 22	2.5-3.25	30 Mar	0	AIL	Vuln. -Booster Failed
	Soctop IV	Discoverer 24	1-6	8 Jun	0	AIL	Vuln. - Booster Failed
	Taki I	Discoverer 25	.16 - 6	16-18 Jun	2	SEL	ABM/GCI- First Recorders
	POPPY I (Greb II)	Transit 4A	.56-.61/ .81-.92	29 Jun-30 Dec	181	NRL	ABM- Failed to Separate
	Wildbill I	Discoverer 26	.04-.13	7-9 Jul	2	SEL	ABM
	Taki	Discoverer 28	.16-.175	3 Aug	0	SEL	Radar
	Texas Pint I	Discoverer 29	.1-.15	30 Aug-1 Sep	2	AIL	AM/FM Environment
	Topsoc I	Discoverer 30	.4-1.6	12-17 Sep	5	AIL	ABM/GS
	Topsoc II	Discoverer 31	.4-1.6	17-21 Sep	4	AIL	ABM/GS
	Topsoc III	Discoverer 32	.4-1.6	13-15 Oct	2	AIL	ABM/GS
	Topsoc IV	Discoverer 34	.4-1.6	5-7 Nov	2	AIL	ABM/GS
	Grape Juice I	Discoverer 36	.06-.07	12-18 Dec	1	HRB	Mercury Grass
	Soctop	698 BJ At. -Ag.	.1-1	22-24 Dec	2	AIL	Vuln. -Reflector (Term. by Tumble)

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Mission No.	Name	Ride (Veh. No.)	RF Range (GHz)	Launch-Death	Life (days)	P/L Contr.	Target/Other
<u>1962 (15 Missions)</u>							
7151	Taki	Discoverer 37	.16-.175	3 Jan	0	SEL	Booster Failure
	Poppy II (2 Ball)	Thor-Able Star	-	24 Jan	0	NRL	GS-Booster Failure
	698 BK II	Thor-Ag. (2301)	2.5-3.2/9-10	21-27 Feb	6	AIL	EOB-R-3/4/62
	Wildbill	Discoverer 38	.04-.13	27 Feb-3 Mar	4	SEL	ABM (TI & Locate)
	Soctop	698 BJ At. -Ag.	.1-1	7-8 Mar	1	AIL	Vuln. - Reflector
7152	Grape Juice II	162 Thor-Ag. B	.066-.07	17-23 Apr	6	HRB	Mercury Grass
	Taki II	162 Thor-Ag. B	.16-.175	28 Apr-5 May	7	ATI	ABM [redacted]
	698 BK III	Thor. Ag. (2312)	2.5-3.2/8.2-12.4	18 Jun	1	AIL	EOB-203 x 212 nm, 82°
	New Jersey I	162 Thor-Ag. B	.1-.2	27 Jul-1 Aug	5	Sanders	Markham GCI
	Grape Juice	162 Thor-Ag. B	.066-.07	17-22 Sep	5	HRB	Mercury Grass
7201	Plym. Rock I	162 Thor-Ag. B	2-4	24-30 Nov	6	SEL	GS
7203	Vino I	162 Thor-Ag. D	.066-.07	4-7 Dec	3	HRB	Mercury Grass
7101	Poppy III	Thor. Ag. (2351) (malfunctioned)	[redacted]	12 Dec [redacted]		NRL	GS-2 Ball Poppy 124 x 1500 nm, 70.3°
7202	Wildbill II	Poppy Launch	.55-.62	12-27 Dec	15	ATI	ABM (TI & Locate)
7204	Taki III	162 Thor. -Ag. D	.16-.175	14-20 Dec	6	ATI	[redacted] Radar
<u>1963 (16 Missions)</u>							
7205	New Jersey II	162 Thor-Ag. D	.1-.2	7-13 Jan	6	Sanders	[redacted]
7153	698 BK IV	Thor-Ag. (2313)	.15-.65/2.5-3.3	16-18 Jan	2	AIL	EOB-258 x 280 nm, 82°
7206	Vino	162 TAT-Ag.	.066-.07	28 Feb	0	HRB	Booster Failure
7005	Stopper	162 Thor-Ag.	.16--2.5	18-20 May	2	EDL	Vulnerability
7207	Wildbill III	162 TAT-Ag. D	.15-.23	12-26 Jun	13	ATI	ABM
7102	Poppy IV	Thor Ag. (2353) (malfunctioned)	[redacted]	15 Jun [redacted]		NRL	GS-3 Ball-96 x 495 nm, 69.9°
7216	Wildbill IV	Thor-Ag. D	[redacted]	15 Jun-22 Jul	37	ATI	ABM-Rode on Poppy

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Mission No.	Name	Ride (Veh. No.)	RF Range (GHz)	Launch-Death	Life (days)	P/L Contr.	Target/Other
1963 (16 Missions) (Cont'd.)							
7006	Stopper	162 TAT-Ag.D	.16--2.5	26-30 Jun	4	EDL	Vulnerability
7154	698 BK V	TAT-Ag. (2314)	.15-.65/2.5-3.25	29 Jun-9 Jul	11	AIL	EOB-270 x 312 nm, 82.4°
7208	Plym. Rock II	698 BK add-on	2-4	29 Jun-11 Jul	12	ATI	GS
7007	Stopper	162 TAT-Ag.D	.16--2.5	27-30 Jul	3	EDL	Vulnerability
7006	Stopper	162 TAT-Ag.D	.16--2.5	28 Aug-1 Sep.	4	EDL	Vulnerability
7301	Pundit I	162 (4001/1601)	.061--.076	29 Oct-5/11/65	560	EDL	Pad TLM, 1st SP-8, P-11
7219	Long John II	162 Thor Ag.D	.153-.163	27 Nov-12 Dec	15	ATI	[Redacted] Radar 25X1
7218	Long John I	162 TAT-Ag.D	.15-.17	21 Dec-10 Jan	20	ATI	[Redacted] Radar
7302	Pundit II	162 (4101/1168)	.061--.076	21 Dec-12 Mar	81	EDL	Pad TLM-170 x 213 nm R-11/7/64
1964 (22 Missions)							
7103	Poppy V	TAT-Ag. (2354)	[Redacted]	11 Jan [Redacted]	[Redacted]	NRL	GS-490 x 505 nm, 69.9°, 1st good Poppy orbit, [Redacted] 25X1
7210	Hayloft	Poppy Launch	.55-.61	11-30 Jan	19	HRB	ABM(10 MBPS KW-26)
7222	Long John	162 TAT-Ag.D	.153-.163	15 Feb-9 Mar	23	ATI	[Redacted] Radar 25X1
7156	698 BK VII	TAT-Ag.D (2316)	.15-.65/2.5-3.25	27 Feb-9 Mar	11	AIL	EOB-272 x 276 nm, 82.1°
7212	Bird Dog II	TAT-Ag. D(2316)	4.95 - 5.08	27 Feb-9 Mar	11	LTV	EOB- [Redacted] 25X1
7008	Stopper	698 BK TAT-Ag.	.16--2.5	27 Feb-9 Mar	11	EDL	Vulnerability
7224	Long John	162 TAT-Ag.	.153-.163	13-26 Jun	13	ATI	[Redacted] Radar 25X1
7223	New Hamp.	-	.1-.15	Never Flew	-	Sanders	[Redacted] GCI 25X1
7155	698 BK VI	TAT-Ag. (2315)	2.5-3.25/8.2-12.4// .059-.13	2-7 Jul	5	AIL	EOB-269 x 286 nm, 82.1°
7211	Bird Dog I	TAT-Ag. (2315)	4.95-5.08	2-7 Jul	5	LTV	EOB- [Redacted] C 25X1
7009	Stopper	698 BK TAT-Ag.	.16--2.5	2-10 Jul	8	AIL	Vulnerability
7304	Noah's Ark	206 At. -Ag.D	.154-.55	6 Jul-2 Oct	88	ATI	ABM-156 x 187 nm, 93°

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Mission No.	Name	Ride (Veh. No.)	RF Range (GHz)	Launch-Death	Life (days)	P/L Contr.	Target/Other
<u>1964 (22 Missions)(Cont'd.)</u>							
7215	Opporknockity I	162 TAT-Ag.D	.066-.072	21 Aug-13 Oct	53	HRB	Mercury Grass
7051	BIT	162 TAT-Ag.D	.154-.164	5-12 Oct	7	EDL	Vulnerability
7303	Pundit III	206 (4102/4810)	.061--.076	8 Oct	0	EDL	Pad TLM-Booster Failed
7305	Step 13	206 (4302/4811)	.15-.23	23 Oct-23 Feb	123	HRB	ABM-R-2/23/65
7306	Plym. Rock III	206 (4302/4811)	1-2.65	23 Oct-23 Feb	123	ATI	GS-R-2/23/65
7010	Stopper	206 At. -Ag.D	.16--2.5	23 Oct	0	EDL	Vulnerability
7052	BIT	162 TAT-Ag.D	.154-.164	2-5 Nov	3	EDL	Vulnerability
7157	698 BK VIII	TAT-Ag.D(2317)	.62-8.2	3-7 Nov	4	AIL	Agena Batteries blew up
7213	Bird Dog III	TAT-Ag.D(2317)	.52-.65	3-7 Nov	3	LTV	EOB-Amplitude monopulse
7053	BIT	162 TAT-Ag.D	.154-.164	18-29 Nov	11	EDL	Vulnerability
7054	BIT	162 TAT-Ag.D	.154-.164	19-28 Dec	9	EDL	Vulnerability

By 1965 Program 770 started with the AIL carbon copy series/Aerospace SETD. P-11 went to dual rocket motors, 270 nm orbits, H/S and sun sensor for attitude reconstruction. The Stoppers for vulnerability monitoring were followed by the P-15 BIT and Otex series. The BIT and Otex missions are omitted from the rest of this summary.

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<u>1965 (8 Missions)</u>							
7104	Poppy VI	Thor-Ag.D(2701)		9 Mar		NRL	
7309	Pundit IV	206 (4401/4814)	.061--.076	28 Apr-Jul'67	730	EDL	Pad TLM, 263 x 303 nm
7307	Fanion I	206 (4402/4817)	4.9-5.1	25 Jun-Mar'67	630	SEL	EOB [redacted]
7308	Tripes I	206 (4402/4817)	4-8	25 Jun-Mar'67	630	ATI	GS-R-8/22/68
7158	Prog. 770 CC	TAT-Ag.(2702)	.64-8.28	16 Jul-5 Sep	50	AIL	EOB-253 x 278 nm, 70.2°
7226	Bird Dog IV	TAT-Ag.(2702)	4.95-5.08	16 Jul	0	LTV	EOB- [redacted]
7312	Magnum	206 (4403/4818)	.1-.25	3 Aug-9 Mar'67	585	ATI	[redacted] 272 x 275 nm, R-6/17/68
7225	Square Twenty	241 TAT Ag.	1.55-1.75	28 Oct-8 Nov	11	LTV	[redacted] Map and Sample

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Mission No.	Name	Ride (Veh. No.)	RF Range (GHz)	Launch-Death	Life (days)	P/L Contr.	Target/Other
<u>1966 (10 Missions)</u>							
7160	Prog. 770-CC	TAT-Ag. (2703)	.65-8.33	9 Feb-6 Sep	209	AIL	EOB/TI- 1st Pre-D
7228	Setter I	TAT-Ag. (2703)	2.68-2.94	9 Feb-20 Mar	40	LTV	EOB-burned out LO
7310	Leige	206 (4404/4824)	.168-.178	14 May	0	ATI	[redacted] D/F
7311	Plicat	206 (4404/4824)	.153-.162	14 May	0	ATI	PRF Doppler
7314	Sampan I	206 (4405/4827)	2.1-4	16 Aug-14 Oct'67	424	SEL	GS-H/S out at Rev 3
7315	Sousea I	206 (4405/4827)	8-12	16 Aug-14 Oct'67	424	ATI	GS- No D/F
7317	Fanion II	206 (4406/4828)	4.9-5.1	16 Sep-7 Dec	82	EDL	EOB [redacted]
7318	Tripos II	206 (4406/4828)	4-8	16 Sep-7 Dec	82	ATI	GS, R-5/9/68
7161	Multi-group I	TAT-Ag (2731)	.125-2.1	28 Dec-19 Jun'67	172	AIL	EOB TI, 261 x 286 nm, 74°
7229	Setter 1A	TAT-Ag (2731)	2.96-3.22	28 Dec-19 Jun'67	172	LTV	EOB, 10 nm accuracy
<u>1967 (8 Missions)</u>							
7319	Fanion III	846 (4408/1634)	4.9-5.15	9 May-23 Jul	75	EDL	EOB [redacted]
7316	Slewto	846 (4408/1634)	.154-.162	9 May-10 Aug	94	ESL	[redacted] TI(Pre-D)
7105	Poppy VII	Thor-Ag (2704)	[redacted]	31 May	[redacted]	NRL	GS/ABM- Growing interest in ocean surveillance.
7320	Savant I	846 (4409/1633)	.061--.24	16 Jun-22 Oct'68	474	ESL	PAD TLM, R-10/22/68
7230	Setter 1B	TAT-Ag (2732)	2.6-3.22	24 Jul-30 Dec	159	LTV	EOB- bad orbit
7231	Donkey	TAT-Ag (2732)	3.35-3.85	24 Jul-24 Jan'68	184	EDL	[redacted] Map and Sample
7162	Multi-group	TAT-Ag (2732)	.125--4.2	24 Jul-30 Dec	159	AIL	EOB/TI, 257 x 371 nm, 75°
7321	Facade	846 (4410/1639)	.25-2.25	2 Nov-7 Feb	97	EDL	ABM, 244 x 284 nm, 82°
<u>1968 (12 Missions)</u>							
7163	Multi-group III	TAT-Ag (2733)	.25-4.2	17 Jan-3 Apr'69	442	AIL	EOB/TI, 247 x 291 nm,
7232	Setter 1B	TAT-Ag (2733)	2.6-3.2	17 Jan-3 Apr'69	442	LTV	EOB- bad orbit

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Mission No.	Name	Ride (Veh. No.)	RF Range (GHz)	Launch-Death	Life (days)	P/L Contr.	Target/Other
<u>1968 (12 Missions) (Cont'd.)</u>							
7324	Tivoli I	846 (4412/1640)	.1 - 4	24 Jan-8 May'69	469	ESL	TI, 0.75 MHz Pre-D
7322	Lampan I	846 (4411/1638)	1-2.1	14 Mar-7 Mar'69	358	ATI	GS-267 x 297 nm, 83.1°
7323	Sampan II	846 (4411/1638)	2.1-4	14 Mar-7 Mar'69	358	SEL	GS-Kill plan left link 4 on
7326	Tripos III	846 (4420/1645)	4-8	20 Jun-10 Jan'70	569	AIL	GS-236 x 278 nm, 85.1°
7327	Sousea II	846 (4420/1645)	8-12	20 Jun-10 Jan'70	569	AIL	GS-1st P-11 DP by LMSC
7325	Vampan I	846 (4413/1647)	.1 - 1	18 Sep-27 Sep'69	374	EDL	ABM, 271 x 276 nm, 83.2°
7164	Thresher I	Th-Ag (2734)	.125-2.1	5 Oct-27 Sep'69	357	AIL	EOB/TI, 261 x 274 nm, 75°
7233	Reaper I	Th-Ag (2734)	1.8-3.3	5 Oct-27 Sep'69	357	LTV	EOB/TI, 4 nm accuracy
7238	Convoy I	Th-Ag (2734)	.38-.43	5 Oct-27 Sep'69	357	ESL	TI-Dog House
7330	Tivoli II	846 (4418/1651)	.05-4	<u>1969 (10 Missions)</u> 19 Mar-21 Aug'70	520	ESL	TI, .75 MHz Pre-D 25X1
7328	Lampan II	846 (4419/1649)	1-2.1	1 May-16 Feb'70	291	ATI	GS, microwave search
7329	Sampan III	846 (4419/1649)	2.1-4	1 May-16 Feb'70	291	ATI	GS, Bar Lock filter
7165	Thresher II	Th-Ag (2735)	.125-2.1	31 Jul-26 Aug'70	391	AIL	EOB/TI
7234	Reaper II	Th-Ag (2735)	1.8-3.3	31 Jul-26 Aug'70	391	LTV	EOB/TI
7239	Convoy II	Th-Ag (2735)	.154--.97	31 Jul-13 Oct'69	75	LTV	ABM/TI-5 MHz Pre-D
7331	Vampan II	(4419)	.1-1	Never flew	-	EDL	4419 Reassigned
7336	Savant II	846 (4419/1653)	.061--.24	22 Sep-10 May'71	595	ESL	Pad TLM Pre-D
7106	Poppy VIII	Thorad-Ag.D (2706)		30 Sep [redacted]		NRL	[redacted]
7313	Weston	Poppy Launch (4407/2706)	.06--.07/.36--.42	30 Sep-17 Aug'70	321	HRB	[redacted] COMINT 25X1

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Mission No.	Name	Ride (Veh. No.)	RF Range (GHz)	Launch-Death	Life (days)	P/L Contr.	Target/Other
<u>1970 (8 Missions)</u>							
7335	Tivoli III	846 (4422/1656)	.05-4	4 Mar-Oct'71	580	ESL	TI, .75 MHz Pre-D
7332	Triplos VI	846 (4421/1657)	4-8	20 May-22 Jan'73	977	AIL	GS, Killed when spin rate slowed to 6 RPM
7333	Sousea III	846 (4421/1657)	8-12	20 May-22 Jan'73	977	AIL	
<u>1971 (7 Missions)</u>							
7166	Thresher III	Th-Ag. (2736)	.125-2.1	26 Aug-1 Feb'72	525	AIL	EOB/TI
7235	Reaper III	Th-Ag. (2736)	1.8-3.3	26 Aug- 1 Feb'72	525	LTV	EOB/TI
<u>1971 (7 Missions)</u>							
7334	Tophat I	846 (4423/1659)	.45-1	18 Nov-13 Aug'74	1364	LTV	Tropo Map and Copy
<u>1971 (7 Missions)</u>							
7167	Thresher IV	Thorad-Ag. D (2737)	.125-2.1	16 Jul-24 Mar'73	617	AIL	EOB/TI
7236	Reaper IV	(2737)	1.8-3.3	16 Jul-24 Mar'73	617	LTV	EOB/TI
7240	Harvester	(last P-770A)	2-12	16 Jul-15 Dec'71	150	ESL	Square Pair Search
7337	Arroyo	846 (4427/1662)	1.2--3.9	10 Sep-10 Oct	30	AIL	Microwave Map
<u>1972 (4 Missions)</u>							
7107	Poppy IX (Last Poppy)	Thorad-Ag. D (2707)		14 Dec -	-	NRL	GS/EOB/Ocean Surveillance
7168	Thresher V	Final Strawman	.125-2.1	Never Flew	-	AIL	EOB/TI
7237	Reaper V	(2708)	1.8-3.3	Never Flew	-	LTV	EOB/TI
7339	Mabeli	467 (4424/8002)	.15--2.5	20 Jan -	-	ESL	ABM/TI
7338	Ursala I	467(4425/8003)	2-12	7 Jul -	-	MOT.	EOB/Ops ELINT

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Mission No.	Name	Ride (Veh. No.)	RF Range (GHz)	Launch-Death	Life (days)	P/L Contr.	Target/Other
				(1973 (3 Missions))			
7342	Ursala II	467 (4426/8007)	2-12	10 Nov -	-	MOT.	EOB/Ops ELINT
				(1974 (2 Missions))			
7340	Tophat II	467 (4428/8008)	.45-1	10 Apr -	-	E-Sys.	Tropo Map and Copy
7341	Raquel I	467 (4429/8008)	4-18	29 Oct -	-	E-Sys.	TI/EOB, .75 MHz, Pre-D
				(1975 (2 Missions))			
			4.8	1976			
7343	Ursala III	467 (4430/8012)	2 - 12	8 Jul -	-	MOT.	EOB

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