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DISCOVERER 37

CONFIDENTIAL

MISSILE: Agena 1120 / Thor 327

LAUNCHED: 1341 PST, 13 January 1962, Pad 4

COUNTDOWN HISTORY:

First Attempt: Launched 13 January 1962. The countdown started at 0335 PST and progressed to liftoff with 3 holds totaling 131 minutes. Hold no. 1 was imposed at T-60 minutes for 50 minutes to adjust liftoff time for trains. Hold no. 2 was imposed at T-7 minutes for 79 minutes due to a malfunction in the Thor Fuel Flow Meter. The count was recycled to T-15 minutes and hold no. 3 was imposed at T-1 minute 30 seconds to allow the Thor LOX Tank pressure to decay. This was a momentary hold.

FLIGHT PERFORMANCE:

1.

Event	Time	Difference
MECO	144.2	144.2 main
VECO	153.1	8.9 vernier
Separation	161.1	8.0 delay
Ignition	193.3	32.2 coast
Burnout	203.9	10.6 hustler

2. Thor Airborne Systems - operated satisfactorily

Agena Airborne Systems - An electrical short apparently occurred at the time of separation which caused the loss of power to the attitude control gyros. The gyros continued to coast for approximately 30 seconds. At Agena engine ignition, the engine hydraulics were responding to large gyro outputs and the vehicle began to tumble violently. Engine shutdown occurred after 10.6 seconds of burn due to this tumbling.

3.

MECO Velocity	10929 fps
Agena Velocity	No Orbit
Apogee	No Orbit
Perigee	No Orbit
Agena Orbital Wieght	No Orbit

AEROSPACE GROUND EQUIPMENT PERFORMANCE:

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5 August 1965 Em

Thor - All AGE Systems operated satisfactorily

Agena - All AGE Systems operated satisfactorily

DOWNGRADE AT 3 YEAR INTERVALS; DECLASSIFIED AFTER 12 YEARS DOD DIR 5200.10

REMARKS:

Discoverer 37 was originally scheduled to be launched on 12 January 1962 but the countdown was not attempted due to a payload problem discovered before the countdown was initiated.

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6595-62-0289

"Ferret 1" (PH) CABLE SPLICE ~~SECRET~~

MISSILE: Agena 2301/Thor 332

~~CONFIDENTIAL~~

LAUNCHED: 1044 PST, 21 February 1962, Pad 5

COUNTDOWN HISTORY:

First Attempt: Cancelled at T-15 minutes due to high velocity upper air winds. Technical holds totaling 4 hours and 24 minutes were imposed. Hold No. 1 lasted 288 minutes and was called to await launch of Mercury. Hold No. 2 lasted 32 minutes due to trains in the hazard corridor. Hold No. 2 lasted 14 minutes due to evaluation of upper air winds.

Second Attempt: Launched 21 February 1962. The countdown was initiated at 0240 PST and progressed to liftoff with one hold of 4 minutes, 37 seconds duration. The hold was imposed during Phase V of the terminal countdown due to the drop-out of a circuit breaker in the Launch Control Cabinet which caused the transporter to fail to retract.

FLIGHT PERFORMANCE:

	Event	Time	Difference
1.	MECO	146.2	146.2 main
	VECO	155.4	9.2 vernier
	Separation	169.8	14.4 delay
	First Ignition	191.2	21.4 coast
	First Burnout	433.2	242 hustler
	Second Ignition	No indication of second burn received.	
	Second Burnout	" " " " " "	

2. Agena Airborne Systems - operated satisfactorily except for second burn.

   Thor Airborne Systems - operated satisfactorily.

3.	MECO Velocity	11,119 fps
	Orbital Velocity	25,860 fps (first injection)
	Apogee	198 N.M.
	Perigee	112 N.M.
	Agena Orbital Weight	2,490 lbs.

AEROSPACE GROUND EQUIPMENT PERFORMANCE:

Thor - Operated satisfactorily.

Agena - Operated satisfactorily except that Agena oxidizer tanking took abnormally long, due to a clogged filter from detanking after the previous countdown.

REMARKS:

This was the first of the Project 102 vehicles.

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6595-62-0974 5 Aug 65 - 2m

Cy # 1 of 3 cys

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DISCOVERER 38

~~CONFIDENTIAL~~

MISSILE: Agena 1123/Thor 241

LAUNCHED: 1139 PST, 27 February 1962

COUNTDOWN HISTORY:

First Attempt: The countdown started at 0335 PST and progressed to liftoff with one hold imposed at T-15 minutes for 10 minutes due to trains in the hazard corridor. R-1 4

FLIGHT PERFORMANCE:

	Event	Time	Difference
1.	MECO	149.0	149.0 main
	VECO	158.2	9.2 vernier
	Separation	168.1	9.9 delay
	Ignition	196.1	28.0 coast
	Burnout	441.9	245.8 hustler

2. Agena Airborne Systems - operated satisfactorily.

   Thor Airborne Systems - operated satisfactorily.

3.	MECO Velocity	11,038 fps
	Orbital Velocity	25,720 fps
	Apogee	219 N.M.
	Perigee	111 N.M.
	Agena Orbital Weight	2,809 lbs.

AEROSPACE GROUND EQUIPMENT PERFORMANCE:

Agena - operated satisfactorily

Thor - operated satisfactorily

REMARKS:

The capsule was ejected on the 65th pass and aeriel recovery was accomplished on 3 March 1962.

6595-62-1068

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5 August 1965 Er

Cy # 1 of 3 cys

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DISCOVERER 39

~~CONFIDENTIAL~~

MISSILE: Agena 1124/Thor 331

LAUNCHED: 1654 PST, 17 April 1962

COUNTDOWN HISTORY:

First Attempt: The countdown started at 0830 PST and progressed to lift off with one hold imposed during Phase III of the terminal count due to failure of the Agena helium tank to pressurize above 2700 PSI because of a loose B-nut on the QD.

FLIGHT PERFORMANCE:

	Event	Time	Difference
1.	MECO	146.0	146.0 main
	VECO	154.9	8.9 vernier
	Separation	161.5	6.6 delay
	Ignition	193.9	32.4 coast
	Burnout	431.8	137.9 hustler

2. Agena Airborne Systems - TM Link I was lost.

   Thor Airborne Systems - operated satisfactorily.

3.	MECO Velocity	11,126 FPS
	Orbital Velocity	25,807 FPS
	Apogee	278 NM
	Perigee	113 NM
	Agena Orbital Weight	2,720 lbs

AEROSPACE GROUND EQUIPMENT PERFORMANCE:

Agena - operated satisfactorily

Thor - operated satisfactorily

REMARKS:

After loss of TM it was decided to make early recovery of the capsule which was ejected from orbit on the 35th pass. Aerial recovery was accomplished on 19 April 1962. The Zeke system was used as backup on recovery and functioned properly. It has since been discovered that tantulun capacitors used in the Link I TM are sensitive to vacuum conditons.

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PROGRAM 622A

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MISSILE: Agena 1125/Thor 333

LAUNCHED: 1630 PST, 28 April 1962

COUNTDOWN HISTORY:

First Attempt: The countdown started at 0800 PST and progressed to liftoff with one hold imposed during Phase III of the terminal count due to a malfunction of the fine LOX load system. A sticking micro switch was loosened and then the terminal count proceeded normally to liftoff.

FLIGHT PERFORMANCE:

	Event	Time	Difference
1.	MECO	147.6	147.6 main
	VECO	156.6	9.0 vernier
	Separation	165.1	8.5 delay
	Ignition	193.7	28.6 coast
	Burnout	428.8	235.1 hustler

2. Agena Airborne Systems -- The H Timer apparently either stopped or slowed down between the second and seventh orbits. The time discrepancy was corrected by the 13th orbit by speeding up the timer.

   Thor Airborne Systems -- operated satisfactorily.

3.	MECO Velocity	11,098 FPS
	Orbital Velocity	25,721 FPS
	Apogee	24.13 NM
	Perigee	121.5 NM
	Agena Orbital Weight	2,700 LBS

AEROSPACE GROUND EQUIPMENT PERFORMANCE:

Agena -- operated satisfactory.

Thor -- operated satisfactory.

REMARKS:

Capsule ejection was accomplished on the 96th orbit, but recovery was not attained due to failure of the parachute cover to release.

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Cy # 1 of 3 cys

~~CONFIDENTIAL~~ PROGRAM 622A ~~SECRET~~

Argo (P4).

MISSILE: Agena 1126 - Thor 334

LAUNCHED: 1236 PDT, 15 May 1962, Pad 5

COUNTDOWN HISTORY:

First Attempt: The countdown started at 0300 PDT, 15 May 1962, and progressed to liftoff with six holds totaling 118 minutes.

a. Hold No. 1 was imposed at T-60 minutes for evaluation of the H-Timer and trains in the hazard corridor (25 minutes).

b. Hold No. 2 was imposed at T-15 minutes and lasted 15 minutes due to trains in the hazard oorridor.

c. Hold No. 3 was imposed in Phase V for 8 minutes due to trains.

d. Phase V was recycled and Hold No. 4 was imposed in Phase V for 6 minutes due to trains.

e. Phase V was again recycled and Hold No. 5 was imposed in Phase V for 6 minutes due to intermittant indication of 100% LOX.

f. Phase V was recycled for the third time and Hold No. 6 was imposed in Phase V and lasted 33 minutes due to intermittant indication of 100% LOX. However, one minute after the hold was imposed the Range was closed due to trains.

FLIGHT PERFORMANCE:

	Event	Time	Difference
1.	MECO	144.2	144.2 main
	VECO	153.2	9.0 vernier
	Separation	159.1	5.9 delay
	Ignition	212.3	54.2 coast
	Burnout	456.6	244.3 hustler

2. Agena Airborne Systems - operated satisfactorily.
   Thor Airborne Systems - operated satisfactorily.

3.	MECO Velocity	10,793 FPS
	Orbital Velocity	25,692 FPS
	Perigee	160 N.M.
	Apogee	350 N.M.
	Agena Orbital Weight	2,429 lbs

AEROSPACE GROUND EQUIPMENT:

Thor and Agena both operated satisfactorily.

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REMARKS: The capsule was ejected on the 63rd pass and aerial recovery was accomplished on 19 May 1962.

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PROGRAM 622A

MISSILE: Agena 1128/Thor 336

LAUNCHED: 1700 PST, 29 May 1962, Pad 1

COUNTDOWN HISTORY:

1. First Attempt: Initiated on 28 May 62, and aborted due to a horizon scanner problem.

2. Second Attempt: Started at 0930 PST on 29 May 62, and proceeded to liftoff with no holds.

FLIGHT PERFORMANCE:

	Event	Time	Difference
1.	MECO	147.5	147.5 main
	VECO	156.4	9.0 vernier
	Separation	162.4	6.0 delay
	Ignition	191.7	19.3 coast
	Burnout	430.9	239.2 hustler

2. Agena Airborne Systems - operated satisfactorily.

   Thor Airborne Systems - operated satisfactorily.

3.	MECO Velocity	11,047 FPS
	Agena Velocity	25,679 FPS
	Apogee	104 N.M.
	Perigee	196 N.M.
	Agena Orbital Weight	2,780 lbs

AEROSPACE GROUND EQUIPMENT:

Thor and Agena both operated satisfactorily.

REMARKS:

The capsule was ejected on the 48th pass, and aerial recovery was accomplished on 1 June 1962.

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PROGRAM 622A

MISSILE: Agena 1127/Thor 335

LAUNCHED: 1731 PDT, 1 June 1962, Pad 4

COUNTDOWN HISTORY:

First Attempt: The countdown was initiated at 1000 PDT and progressed to liftoff with no holds.

FLIGHT PERFORMANCE:

	Event	Time	Difference
1.	MECO	147.4	147.4 main
	VECO	156.4	8.0 vernier
	Separation	164.0	7.6 delay
	Ignition	195.3	31.3 coast
	Burnout	427.8	232.5 hustler

2. Agena Airborne Systems - operated satisfactorily.

   Thor Airborne Systems - operated satisfactorily.

3.	MECO Velocity	11,093 FPS
	Agena Velocity	25,706 FPS
	Apogee	115 N.M.
	Perigee	224 N.M.
	Agena Orbital Weight	2,752 LBS

AEROSPACE GROUND EQUIPMENT:

Thor and Agena both operated satisfactorily.

REMARKS:

The capsule was ejected on the 64th pass on 5 June 1962; however, during an attempted aeriel recovery the parachute was damaged and the capsule hit the water and sank immediately.

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Ferret 2 (P4).

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PROGRAM 698BK

~~CONFIDENTIAL~~

MISSILE: Agena 2312, Thor 343

LAUNCHED: 1320 PDT, 18 June 1962, Pad 5

COUNTDOWN HISTORY:

1. First Attempt: The countdown was initiated at 0555 PDT, 16 Jun 62, and scrubbed at 1120 PDT due to technical problems in the payload.

2. Second Attempt: The countdown was initiated at 0400 PDT, 18 Jun 62. During the countdown a liftoff tone test signal was sent from the Lockheed launch conductors console which caused the Agena umbilicals to drop out. The countdown proceeded after re-installation of the umbilicals with three holds totaling 73 minutes. Hold No. 1 was imposed at T-60 minutes for 55 minutes to complete work that had fallen behind due to the umbilical problem. Hold No. 2 was imposed in Phase V for 8 minutes due to a man in the hazard corridor. Phase V was re-cycled and Hold No. 3 was imposed in Phase V for 10 minutes due to a faulty Agena gyro spin motor monitor indication.

FLIGHT PERFORMANCE:

Event	Time	Difference
1. MECO	142.8	142.8 main
VECO	151.8	9.0 vernier
Separation	163.6	11.8 delay
First Ignition	207.1	43.5 coast
First Burnout	440.0	232.9 hustler
Second Ignition	3,175.2	2,735.2 coast
Second Burnout	3,176.4	1.2 hustler

2. Agena Airborne Systems - operated satisfactorily.
   Thor Airborne Systems - operated satisfactorily.

3. MECO Velocity	11,217 FPS
Agena Velocity	25,230 FPS (after second burn)
Apogee	223 N.M. (after second burn)
Perigee	200 N.M. (after second burn)
Agena Orbital Weight	2,524 lbs.

AEROSPACE GROUND EQUIPMENT:

Thor : Operated satisfactorily.
Agena: A short in the Lockheed launch conductors console caused the Lockheed pneumatic system to energize when a liftoff tone test signal was sent and dropped the umbilicals.

REMARKS:
This was the second of a Program 102 (698BK) vehicle, and the payload was non-recoverable.

PROGRAM 622A

MISSILE: Agena 1129 - Thor 339

LAUNCHED: 1730 PDT, 22 Jun 62, Pad 4

COUNTDOWN HISTORY:

The countdown was initiated at 1000 PDT, and progressed to liftoff with no holds.

FLIGHT PERFORMANCE:

	Event	Time	Difference
1.	MECO	148.8	148.8 main
	VECO	157.8	9.0 vernier
	Separation	167.2	9.4 delay
	Ignition	194.6	27.4 coast
	Burnout	430.7	236.1 hustler

2. Agena Airborne Systems - operated satisfactorily.

   Thor Airborne Systems - operated satisfactorily.

3.	MECO Velocity	11,182 FPS
	VECO Velocity	25,632 FPS
	Apogee	170 N.M.
	Perigee	113 N.M.
	Agena Orbital Weight	2,780 lbs.

AEROSPACE GROUND EQUIPMENT:

Both Thor and Agena AGE operated satisfactorily.

REMARKS:

The capsule was ejected on the 48th orbit, and aerial recovery was accomplished on 25 Jun 62.

6595-62-2977

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PROGRAM 622A

MISSILE: Agena 1151/Thor 340

LAUNCHED: 1809 PDT, 27 June 1962, Pad 1

COUNTDOWN HISTORY:

First Attempt: The countdown was initiated at 1000 PDT on 27 Jun 62 and progressed to liftoff with one hold for 40 minutes to complete work which had fallen behind schedule.

FLIGHT PERFORMANCE:

	Event	Time	Difference
1.	MECO	149.2	149.2 main
	VECO	158.1	8.9 vernier
	Separation	167.4	9.3 delay
	Ignition	202.2	34.8 coast
	Burnout	442.6	240.4 hustler

2. Airborne Systems Performance: Both Thor and Agena airborne systems performed satisfactorily.

3.	MECO Velocity	11,107 FPS
	Agena Velocity	25,840 FPS
	Apogee	390 N.M.
	Perigee	114 N.M.
	Agena Orbital Weight	2,822 lbs.

AEROSPACE GROUND EQUIPMENT PERFORMANCE:

Both Thor and Agena AGE operated satisfactorily.

REMARKS:

1. This was the first of the Agena "D" vehicles.

2. The recoverable capsule was ejected on the 64th pass and aeriel recovery was accomplished on 1 Jul 62.

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5 August 1965 - En

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Cy #1 of 3 cys

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PROGRAM 622A

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MISSILE: Agena 1130/Thor 342

LAUNCHED: 1756 PDT, 20 Jul 62, Pad 5

COUNTDOWN HISTORY:

1. First Attempt: The countdown was initiated at 1000 PDT, 19 Jul 62, and scrubbed at 1900 PDT due to rupture of a helium high pressure line and malfunction at the differential pressure switch in the Agena helium pressurization system.

2. Second Attempt: The countdown was initiated at 1000 PDT, 20 Jul 62, and progressed without difficulty until Phase IV of the terminal count, at which time a hold was imposed due to failure of Booster TM #1 causing loss of COTAR capability for range tracking. It was subsequently decided to launch without COTAR and terminal count proceeded to liftoff without further problems.

FLIGHT PERFORMANCE:

	Event	Time	Difference
1.	MECO	145.7	145.7 main
	VECO	154.8	9.1 vernier
	Separation	160.7	5.1 delay
	Ignition	192.4	31.7 coast
	Burnout	431.7	239.3 hustler

2. Airborne Systems Performance: Both Thor and Agena airborne systems performed satisfactorily.

3.	MECO Velocity	11,160 FPS
	Agena Velocity	25,700 FPS
	Apogee	111 N.M.
	Perigee	211 N.M.
	Agena Orbital Weight	2,790 lbs

AEROSPACE GROUND EQUIPMENT PERFORMANCE:

Both Thor and Agena AGE operated satisfactorily.

REMARKS:

The recoverable capsule was ejected on the 48th pass and aerial recovery was accomplished on 22 Jul 62.

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6595-62-3332

Cy #1 & 2 cys

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PROGRAM 622A

MISSILE: Agena 1131/Thor 347

LAUNCHED: 1730 PDT, 27 July 1962, Pad 4

COUNTDOWN HISTORY:

First Attempt: The countdown was initiated at 1000 PDT on 27 Jul 62 and progressed to liftoff with no holds. One delay at approximately one hour occurred due to malfunction of the pad Firex deluge system causing Agena cabling connectors to ground out.

FLIGHT PERFORMANCE:

	Event	Time	Difference	
1.	MECO	143.5	143.5	main
	VECO	152.6	9.1	vernier
	Separation	158.2	5.6	delay
	Ignition	188.4	30.2	coast
	Burnout	430.9	242.5	hustler

2. Airborne Systems Performance: Both Thor and Agena airborne systems performed satisfactorily.

3.	MECO Velocity	11,180 FPS
	Agena Velocity	25,740 FPS
	Apogee	111 N.M.
	Perigee	225 N.M.
	Agena Orbital Weight	2,797 LBS

AEROSPACE GROUND EQUIPMENT PERFORMANCE:

Both Thor and Agena AGE operated satisfactorily.

REMARKS:

1. This was the first booster utilizing PDM telemetry.

2. The recoverable capsule was ejected on the 64th pass, and aerial recovery was accomplished on 31 Jul 62.

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5 August 1965 - En

6595-62-3384

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PROGRAM 622A

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MISSILE: Agena 1152/Thor 344

LAUNCHED: 1717 PDT, 1 August 1962, Pad 1

COUNTDOWN HISTORY:

1. First Attempt: The countdown was initiated at 0700 PDT on 21 Jul 62 and progressed without difficulty until 1500 when conflict with an Atlas launch countdown caused post-ponement for one day.

2. Second Attempt: The countdown was initiated at 1000 PDT and progressed to liftoff without any system problems.

FLIGHT PERFORMANCE:

	Event	Time	Difference
1.	MECO	143.2	143.2
	VECO	152.0	8.8
	Separation	158.5	6.5
	Ignition	194.7	36.2
	Burnout	432.5	237.8

2. Airborne Systems Performance: Both Thor and Agena airborne systems performed satisfactorily.

3.	MECO Velocity	10,875 FPS
	Agena Velocity	25,740 FPS
	Apogee	113 N.M.
	Perigee	228 N.M.
	Agena Orbital Weight	2,777 LBS

AEROSPACE GROUND EQUIPMENT PERFORMANCE:

Both Thor and Agena AGE operated satisfactorily.

REMARKS:

1. The recoverable capsule was ejected on the 64th pass and aerial recovery was accomplished on 5 Aug 62.

2. This was the 50th Thor/Agena launch.

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6595-62-3492

Cy #1 of 3 cys

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PROGRAM 162

MISSILE: Agena 1153/Thor 349

LAUNCHED: 1800 PDT, 28 August 1962, Pad 2

COUNTDOWN HISTORY:

First Attempt: This attempt was initiated on 27 Aug 62 and cancelled due to failure of the Agena ascent antenna.

Second Attempt: This attempt was initiated at 1000 PDT on 28 Aug 62, and progressed to liftoff with no holds.

FLIGHT PERFORMANCE:

	Event	Time	Difference
1.	MECO	145.7	145.7 main
	VECO	154.8	9.1 vernier
	Separation	163.3	8.5 delay
	Ignition	196.6	33.3 coast
	Burnout	435.2	238.6 hustler

2. Airborne Systems Performance: Both Thor and Agena Airborne Systems performed satisfactorily.

3.	MECO Velocity	11,130 FPS
	Agena Velocity	25,725 FPS
	Apogee	218 N.M.
	Perigee	96.6 N.M.
	Agena Orbital Weight	2,808 lbs

AEROSPACE GROUND EQUIPMENT PERFORMANCE:

Both Thor and Agena AGE operated satisfactorily.

REMARKS:

1. The capsule was ejected on the 64th pass, and aerial recovery accomplished on 1 Sep 62.

2. This was the first Thor/Agena vehicle launched from 75-1-2.

6595-62-3813

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5 Aug 65 - En

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Cy # 1 of 3 cys

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PROGRAM 162

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MISSILE: Agena 1132/Thor 348

LAUNCHED: 1339 PDT, 1 September 1962, Pad 5

COUNTDOWN HISTORY:

First Attempt: This attempt was initiated at 0600 PDT on 1 Sep 62, and progressed to liftoff with one hold of 9 minutes duration to adjust the T-Time Clock.

FLIGHT PERFORMANCE:

	Event	Time	Difference
1.	MECO	145.1	145.1 main
	VECO	154.1	9.0 vernier
	Separation	162.0	7.9 delay
	Ignition	217.0	55.0 coast
	Burnout	461.0	244.0 hustler

2. Airborne Systems Performance: Both Thor and Agena airborne systems performed satisfactorily.

3.	MECO Velocity	10,930 FPS
	Agena Velocity	25,700 FPS
	Apogee	369 N.M.
	Perigee	162 N.M.
	Agena Orbital Weight	2,500 lbs

AEROSPACE GROUND EQUIPMENT PERFORMANCE:

Both Thor and Agena AGE operated satisfactorily.

REMARKS:

The capsule was ejected on the 64th pass, and recovery attempt on 5 Sep 62 failed when the capsule sank.

6595-64-2248

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PROGRAM 162

MISSILE: Thor 350/Agena 1133

LAUNCHED: 1646 PDT, 17 September 1962, Pad 4

COUNTDOWN HISTORY:

First Attempt: The countdown was initiated at 0900 PDT on 14 September 1962 and was scrubbed when the velocity integrator gave erratic indications.

Second Attempt: The countdown was initiated at 0900 PDT on 16 September 1962 and was scrubbed when the Lifeboat gas loading solenoid valve failed to operate due to an electrical connector not being mated properly.

Third Attempt: The countdown was initiated at 0900 PDT on 17 September 1962 and progressed to liftoff with no holds.

FLIGHT PERFORMANCE:

	Event	Predicted Time	Actual Time
1.	MECO	146.2	147.0
	VECO	155.2	156.1
	Separation	164.5	166.1
	Ignition	191.6	193.0
	Burnout	433.9	436.7

2. Both Thor and Agena Airborne Systems performed satisfactorily.

3.

	Predicted	Actual
MECO Velocity	10,985 fps (inertial)	11, 020 fps (inertial)
Injection Velocity	25,759 fps (inertial)	29,965 fps (inertial)
Perigee	111.9 n.m.	112 n.m.
Apogee	240.7 n.m.	362 n.m.
Period	91.02 min	93.32 min
Inclination Angle	81.74 deg	81.76 deg
Agena Orbital Weight	2794 lbs	2812 lbs

AEROSPACE GROUND EQUIPMENT PERFORMANCE:

Both Thor and Agena AGE performed satisfactorily.

REMARKS:

The capsule was ejected on the 17th pass and water recovery was accomplished on 18 September 1962.

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~~CONFIDENTIAL~~

NASA S-27

MISSILE: Thor 341/Agena 6101 - Spacecraft S-27 (Alovette)

LAUNCHED: 2305 PDT, 28 September 1962, Pad 1

COUNTDOWN HISTORY:

First Attempt: The countdown was initiated at 1205 PDT on 26 September 1962 and was scrubbed when the Agena failed to receive the Destruct Arm Signal in Phase V of the Terminal Count. Four holds totaling 142 min were imposed.

Second Attempt: The countdown was initiated at 1205 PDT on 28 September 1962 and progressed to liftoff with one hold of 13 min duration imposed when the Thor link 1 telemetry set malfunctioned.

FLIGHT PERFORMANCE:

	Event	Predicted Time	Actual Time	Actual Difference
1.	MECO	143.9	144.3	144.3
	VECO	152.9	153.3	9.0
	Agena Separation	160.5	162.5	9.2
	1st Ignition	186.4	185.3	22.8
	1st Burnout	424.2	421.8	236.5
	2nd Ignition	3319.4	3320.0	2898.2
	2nd Burnout	3322.8	3323.4	3.4

2. Both Thor and Agena airborne performance was satisfactory.

3.

	Predicted	Actual
MECO Velocity	10970 fps	10961 fps
Perigee Velocity	24050 fps	24160 fps
Attained Orbit Apogee	539.5 n.m.	557.0 n.m.
Attained Orbit Perigee	546.8 n.m.	538.0 n.m.
Attained Orbit Period	105.0 min	105.4 min
Attained Orbit Inclination Angle	79.9 deg	80.6 deg
Attained Orbital Weight	2306 lbs	2304 lbs

AEROSPACE GROUND EQUIPMENT PERFORMANCE:

Both Thor and Agena age operated satisfactorily.

REMARKS:

1. This was the first NASA Thor/Agena Launch from the west coast.
2. The S-27 Spacecraft was built by Canada.
3. The spacecraft is reported to be performing satisfactorily.

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PROGRAM 162

MISSILE: Thor 351/Agena 1154

LAUNCHED: 1635 PDT, 29 September 1962, Pad 2

COUNTDOWN HISTORY:

First Attempt: The countdown was initiated at 0840 PDT on 27 September 1962 and was aborted in Phase III of the Terminal Count due to a Thor umbilical problem.

Second Attempt: The countdown was initiated at 0835 PDT on 29 September 1962 and progressed to liftoff with no holds.

FLIGHT PERFORMANCE:

	Event	Predicted Time	Actual Time
1.	MECO	145.2	146.6
	VECO	154.2	155.6
	Separation	161.6	164.7
	Ignition	198.4	197.9
	Burnout	437.3	435.8

2. Both Thor and Agena Airborne Systems operated satisfactorily.

		Predicted	Actual
3.	MECO Velocity (inertial)	11,170 fps	11,175 fps
	Injection Velocity (inertial)	26,679 fps	25,720 fps
	Apogee	197 n.m.	208 n.m.
	Perigee	113 n.m.	106 n.m.
	Period	90.16 min.	90.3 min.
	Inclination Angle	64.91 lbs.	65.44 deg
	Agena Orbital Weight	2,816 lbs.	2,812 lbs.

AEROSPACE GROUND EQUIPMENT PERFORMANCE:

Both Thor and Agena AGE operated satisfactorily.

REMARKS:

The capsule was ejected on the 48th pass and aerial recovery was accomplished on 2 October 1962.

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Cy #1 of 3 cys

6595-62-4407

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PROGRAM 162

MISSILE: Thor 352/Agena 1134

LAUNCHED: 1135 PDT, 9 October 1962, Pad 4

COUNTDOWN HISTORY:

First Attempt: The countdown was initiated at 0300 on 9 October 1962 and progressed to liftoff with two holds totaling 35 min. Hold No. 1 was imposed at T-60 min. for 15 min. to adjust the T time clock to a change in launch window. Hold No. 2 was imposed at T-15 min. for 20 min. due to trains in the hazard area.

FLIGHT PERFORMANCE:

	Event	Predicted Time	Actual Time
1.	MECO	145.5	147.2
	VECO	154.5	156.2
	Separation	162.7	166.1
	Ignition	214.2	206.7
	Burnout	457.2	452.1

2. Both Thor and Agena Airborne Systems operated satisfactorily.

		Predicted	Actual
3.	MECO Inertial Velocity	10,894 fps	10,785 fps
	Injection Inertial Velocity	25,349 fps	25,285 fps
	Apogee	167.1 n.m.	243 n.m.
	Perigee	164.2 n.m.	123 n.m.
	Period	90.57 min.	91.02 min.
	Inclination Angle	81.77 deg	81.99 deg
	Agena Orbital Weight	2,594 lbs	2,595 lbs

AEROSPACE GROUND EQUIPMENT PERFORMANCE:

All Thor Airborne systems performed normally, however, during the BTL MBGE antenna switchover at T+68 sec, the BTL Ground Station receiver automatic frequency control tracked the normal transients and did not return to nominal. Therefore, guidance was lost and no discrete commands were sent. This has been corrected by installing a switch in the ground station with which the operator can return the automatic frequency control to nominal.

REMARKS:

The capsule was ejected on the 64th pass and aerial recovery was accomplished on 13 October 1962.

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Cy #1 of 3 cys

6595 62 1400

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DOWNGRADED AT 3-YEAR INTERVALS
DECLASSIFIED AFTER 12 YEARS
DOD DIR 5200.10

PROGRAM 162

MISSILE: Agena 1401/Thor 353

LAUNCHED: 0914 PDT, 26 October 1962, Pad 2

COUNTDOWN HISTORY:

First Attempt: The countdown was initiated at 0001 PDT on 24 October 1962 and was cancelled when the payload telemetry link malfunctioned.

Second Attempt: Tasks 1 through 6 were completed on 25 October due to anticipated interference with another vehicle and the final countdown was initiated at 0200 PDT on 26 October 1962. One hold of 75 min. duration was imposed due to trains in the hazard area and weather.

FLIGHT PERFORMANCE:

	Event	Predicted Time	Actual Time
1.	MECO	145.7	147.7
	VECO	154.7	156.7
	Separation	167.6	171.6
	Ignition	199.4	198.5
	Burnout	439.7	441.6

2. Both Thor and Agena Airborne Systems performed satisfactorily.

		Predicted	Actual
3.	MECO Velocity	11,023 fps	11,040 fps
	Injection Velocity	29,006 fps	28,992 fps
	Apogee	3,036 nm	3,020 nm
	Perigee	114 nm	110 nm
	Period	148.6 min	148.0 min
	Inclination Angle	69.9 deg	71.33 deg
	Agena Orbital Weight	2,016 lbs	2,018 lbs

AEROSPACE GROUND EQUIPMENT PERFORMANCE:

Both Thor and Agena AGE performed satisfactorily.

REMARKS:

1. This vehicle did not carry a recoverable package.
2. Data return from the radiation mapping experiments aboard have been reported as good.

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PRB 4 JAN 66

Cy # 1 of 3 cys

6595-62-4496

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PROGRAM 162

MISSILE: Agena 1136/Thor 356

LAUNCHED: 1404 PST, 5 November 1962, Pad 4

COUNTDOWN HISTORY:

First Attempt: The countdown was initiated at 0630 PST on 5 November 1962 and proceeded to liftoff with two holds totaling 4 min imposed during Phase V of the Terminal Count. Both holds were imposed when the transporter-erector retracted slower than normal.

FLIGHT PERFORMANCE:

	Event	Predicted Time	Actual Time
1.	MECO	146.4	145.9
	VECO	155.4	154.8
	Separation	164.9	163.7
	Ignition	192.6	191.1
	Burnout	437.8	439.4

2. Both Thor and Agena Airborne Systems performed satisfactory.

3.

	Predicted	Actual
MECO Inertial Velocity	11,161 fps	11,114 fps
Injection Inertial Velocity	25,727 fps	25,728 fps
Apogee	223.3 nm	225.5 nm
Perigee	112.6 nm	113.3 nm
Period	90.68 min	90.74 min
Inclination Angle	74.88 deg	74.9 deg
Agena Orbital Weight	2819 lbs	2820 lbs

AEROSPACE GROUND EQUIPMENT PERFORMANCE:

Both Thor and Agena AGE performed satisfactorily.

REMARKS:

The capsule was ejected on the 65th pass and aeriel recovery was accomplished on 9 November 1962.

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6595-62-4785
Cy #1 of 3 cys

DOWNGRADED AT 3 YEAR INTERVALS,
DECLASSIFIED AFTER 12 YEARS
DOD DIRECTIVE 5200.10

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PROGRAM 162

MISSILE: Thor 367/Agena 1135

LAUNCHED: 1401 PST, 24 November 1962, Pad 4

COUNTDOWN HISTORY:
First Attempt: The countdown was initiated at 0600 on 24 November 1962 and proceeded to liftoff with no holds.

FLIGHT PERFORMANCE:

	Event	Predicted Time	Actual Time
1.	MECO	147.1	149.1
	VECO	156.1	158.1
	Separation	164.9	170.5
	Ignition	192.6	192.8
	Burnout	434.8	434.8

2. Both Thor and Agena Airborne Systems operated satisfactorily.

		Predicted Time	Actual Time
3.	MECO Inertial Velocity	11,171 fps	11,130 fps
	Injection Inertial Velocity	25,656 fps	25,660 fps
	Apogee	183.8 n.m.	186 n.m.
	Perigee	113.1 n.m.	114.6 n.m.
	Period	89.93 min.	89.90 min.
	Inclination Angle	64.87 deg	65.18 deg
	Agena Orbital Weight	2,910 lbs	2,923 lbs

AEROSPACE GROUND EQUIPMENT PERFORMANCE:

Both Thor and Agena AGE performed satisfactorily.

REMARKS:

1. The capsule was ejected on the 80th pass and aeriel recovery was accomplished on 28 November 1962.

2. This was the last of the Agena B vehicles to be launched by Program 162, and the first to attain a controlled orbit life of 5 days duration.

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Cy #1 of 3 cys

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PROGRAM 162

MISSILE: Thor 361/Agena 1155

LAUNCHED: 1330 PST, 4 December 1962, Pad 2

COUNTDOWN HISTORY:

First Attempt: The countdown was initiated at 0500 PST, 4 December 1962, and progressed to liftoff with one hold of 30 min duration imposed for trains in the danger area.

FLIGHT PERFORMANCE:

	Event	Predicted Time	Actual Time
1.	MECO	145.3	146.8
	VECO	154.3	155.8
	Separation	161.7	162.2
	Ignition	198.8	191.5
	Burnout	437.0	433.2

2. Both Thor and Agena Airborne Systems performed satisfactorily.

3.

	Predicted	Actual
MECO Inertial Velocity	25,692 fps	25,630 fps
Injection Inertial Velocity	11,155 fps	10,853 fps
Apogee	204 nm	179 nm
Perigee	113 nm	72 nm
Period	90.3 min	88.9 min
Inclination Angle	64.9 deg	65.2 deg
Agena Orbital Weight	2,849 lbs	2,880 lbs

AEROSPACE GROUND EQUIPMENT PERFORMANCE:

Both Thor and Agena AGE performed satisfactorily.

REMARKS:

The capsule was ejected on pass 34 and recovery attempt on 6 December 1962 failed when the capsule sank.

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6595-62-4899

Cy #1 of 3 cys

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PROGRAM 698BK

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MISSILE: Thor 365/Agena 2351

LAUNCHED: 2007 PST, 12 December 1962, Pad 1

COUNTDOWN HISTORY:

First Attempt: The countdown was initiated at 0800 PST on 7 December 1962, and was cancelled due to a fused relay creating improper power distribution in the Agena.

Second Attempt: The countdown was initiated at 0800 PST on 12 December 1962, and proceeded to liftoff with one hold of 7 minutes duration in the Terminal Count due to communication difficulties with PMR.

FLIGHT PERFORMANCE:

	Event	Predicted Time	Actual Time
1.	MECO	147.6	149.7
	VECO	156.6	158.7
	Separation	162.4	166.7
	1st Ignition	211.1	210.4
	1st Burnout	445.6	451.0
	2nd Ignition	3,308.1	Not achieved
	2nd Burnout	3,311.5	Not achieved

2. Thor Airborne Systems: Performed satisfactorily.

Agena Airborne Systems: A malfunction in the velocity meter caused the Agena to burn to propellant depletion during the first burn period, therefore; second burn was not achieved and the attained orbit is highly elliptical due to the excess velocity at injection.

3.

	Predicted	Actual
MECO Velocity	11,373 fps	11,349 fps
1st Burn Injection Velocity	26,338 fps	27,577 fps
2nd Burn Injection Velocity	24,244 fps	-----
Apogee	504 N.M.	1,512 N.M.
Perigee	505 N.M.	132 N.M.
Period	103.5 min	116.4 min
Inclination Angle	69.4 deg	70.33 deg
Agena Orbital Weight	2,371 lbs	2,388 lbs

REMARKS:

This vehicle carried five non-recoverable payloads for the Naval Research Labs.

6595-62-5014

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Cy # 1 of 3 cys

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PROGRAM 162

MISSILE: Thor 368/Agena 1156

LAUNCHED: 1326 PST, 14 December 1962, Pad 5

COUNTDOWN HISTORY:

First Attempt: The countdown was initiated at 0500 on 14 December 1962 and progressed to liftoff with one hold of 29 min duration imposed at T-15 min to correct an Agena helium leak.

FLIGHT PERFORMANCE:

	Event	Predicted Time	Actual Time
1.	MECO	146.5	146.0
	VECO	155.5	154.9
	Separation	162.9	161.3
	Ignition	193.9	192.8
	Burnout	436.9	433.9

2. Both Thor and Agena Airborne Systems performed satisfactorily.

3.

	Predicted	Actual
MECO Inertial Velocity	11,176 fps	11,160 fps
Injection Inertial Velocity	25,707 fps	25,700 fps
Apogee	212.3 nm	218 nm
Perigee	112.9 nm	108.9 nm
Period	90.47 min	90.53 min
Inclination Angle	69.88 deg	70.95 deg
Agena Orbital Weight	2,893 lbs	2,893 lbs

AEROSPACE GROUND EQUIPMENT PERFORMANCE:

Both Thor and Agena AGE performed satisfactorily.

REMARKS:

The capsule was ejected on the 48th pass and aeriel recovery was accomplished on 17 December 1962.

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6595-63-0079
Cy #1 of 3 cys

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