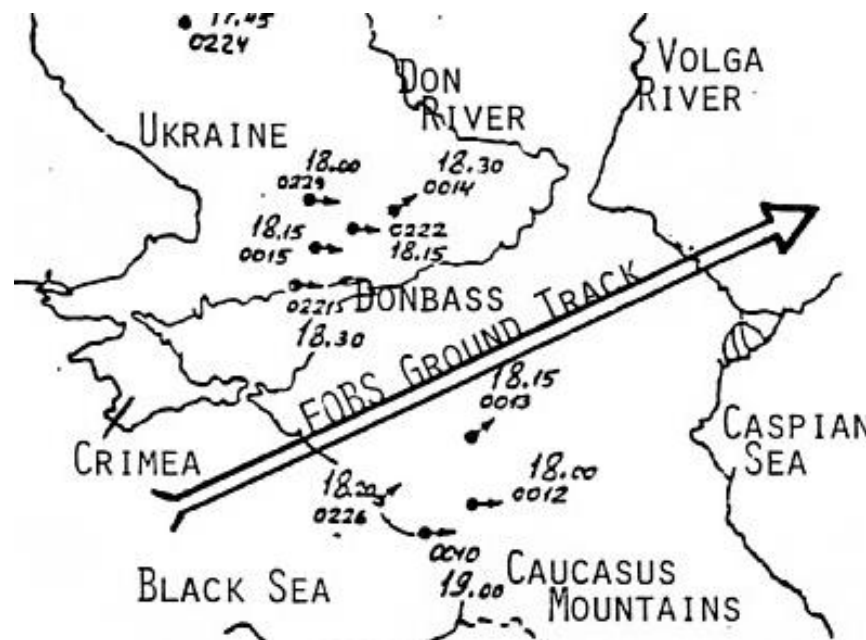


Solved: The 1967 Soviet Union “Crescents-in-the-Sky” Wave [and why American intelligence agencies were so interested]



James Oberg
December 31, 2016
FINAL DRAFT
jamesEoberg@Comcast.net

THIS IS NOT A STORY ABOUT SPACE ALIENS & UFOs

- It IS about **human** spacecraft and the globe-spanning paths they follow
- It IS about **human** witnesses to extraordinary spectacles in the sky
- It IS about **human** analysts and historians who seek to understand

- ...and mostly is about the astonishingly synergistic way in which these unrelated threads wove themselves together into a tapestry of mystery and anxiety, puzzlement and elucidation, elaborate mathematical manipulations and sudden epiphanies, to contribute to the HUMAN cultural enrichment as a consequence of the arrival of the Space Age.

What happened fifty years ago.....


- In 1967-8 the USSR was 'visited' by a very specific sky apparition
- A 'crescent' [or 'sickle'] shaped thing crossed from west to east across southern Russia and the lower Volga region, again and again and again
- It sparked the most massive UFO excitement in Russian history
- It led to official 'Academy of Sciences' endorsement of 'anomalies'
- Western UFO experts touted it as overwhelming evidence for the reality of an unexplainable phenomenon in the skies [and many still do]
- BUT -- The sightings coincided in time, space, and motion with test flights of a top secret Soviet military space-to-ground nuclear attack system which US experts named the 'Fractional Orbit Bombardment System" [FOBS]
- The eyewitness narratives contained clear descriptions of the weapon's attack profile that might have provided critical operational data to the US – as long as the Soviets never realized why the CIA studied 'UFO reports'

Why understanding this is important TODAY

- Identifying this aerospace mystery is extremely satisfying from the perspectives of accurate and thorough space history research
- Assessing how and WHY the USSR tried to keep the system secret explains many of their publicity actions in related areas [including UFO reports]
- Showing how the US State Department self-contorted to insist it was NOT a violation of existing treaties against stationing weapons of mass destruction in space is a study in arms control reality-avoidance not unknown even today
- Such events demonstrates exactly WHY the US military intelligence services SHOULD have paid close attention to USSR-region UFO reports
- ... And why such interest SHOULD have been kept as secret as possible
- Studying eyewitness reports can help calibrate UFO reports in general
- Studying fallacious assessments by leading 'UFOlogists' pinpoints main conceptual and logical flaws which continue to impede current thinking
- New launch profiles now being introduced may replicate this apparition leading to a new generation of sighting reports of 'crescent clouds'

“shaped like a sickle or crescent moon...”





**NOT THE 'SICKLE' – BUT THIS
UNUSUAL AIRCRAFT CONTRAIL
SHOWS VAGUE SIMILARITIES
WITH WITNESS DESCRIPTIONS**

**... BUT ACTUAL WITNESS
DRAWINGS – NOT TO MENTION
PHOTOGRAPHS – SEEM RARE.**

The only known authentic drawing? Or two?

SUGGESTIVELY SIMILAR ARTIST
CONCEPT [?] FROM RUSSIAN
WEBSITE, UNKNOWN ORIGIN



**“LEADER” (DISTANCE FROM
THE ‘SICKLE’ NOT TO SCALE).**

Рис. 21. Зарисовка «сержа», сделанная Николаем В.

Figure 21. SKETCH OF THE ‘SICKLE’ MADE BY NIKOLAY V.



Similar shapes, but
connection is obscure

HISTORY CHANNEL
artist impression
of 1967 'crescent'



**UNIDENTIFIED
PHENOMENON,
UNDISCLOSED
PLACE AND TIME**

<https://www.youtube.com/watch?v=SsPSH3FDMw0>

THE SHAPE WAS THE PUZZLEMENT – AND THE CLUE

- The reported WIDTH of the ‘shock wave’ was baffling
- As a category of visual reports of anomalous atmospheric phenomena, this category was extremely rare, even unique
- Meteors and satellite reentries make fireballs of small angular size and no discernable width, with no analogous observations
- Hypersonic wind tunnel tests show such wide shock fronts but on a much smaller scale – not kilometers wide
- The physical process to create such a highly-visible wide-area witnessing remained elusive for decades

USSR dramatis personae:

- Feliks Zigel Феликс Юрьевич Зигель,
 - March 20, 1920 - November 20, 1988
 - <http://ufo.far.ru/zigel.html>
 - Lev Gindilis
-
- Yuliy Platov



1967: "Flying crescents" over the SE Ukraine, Donbass, Volga Valley, Caucasus

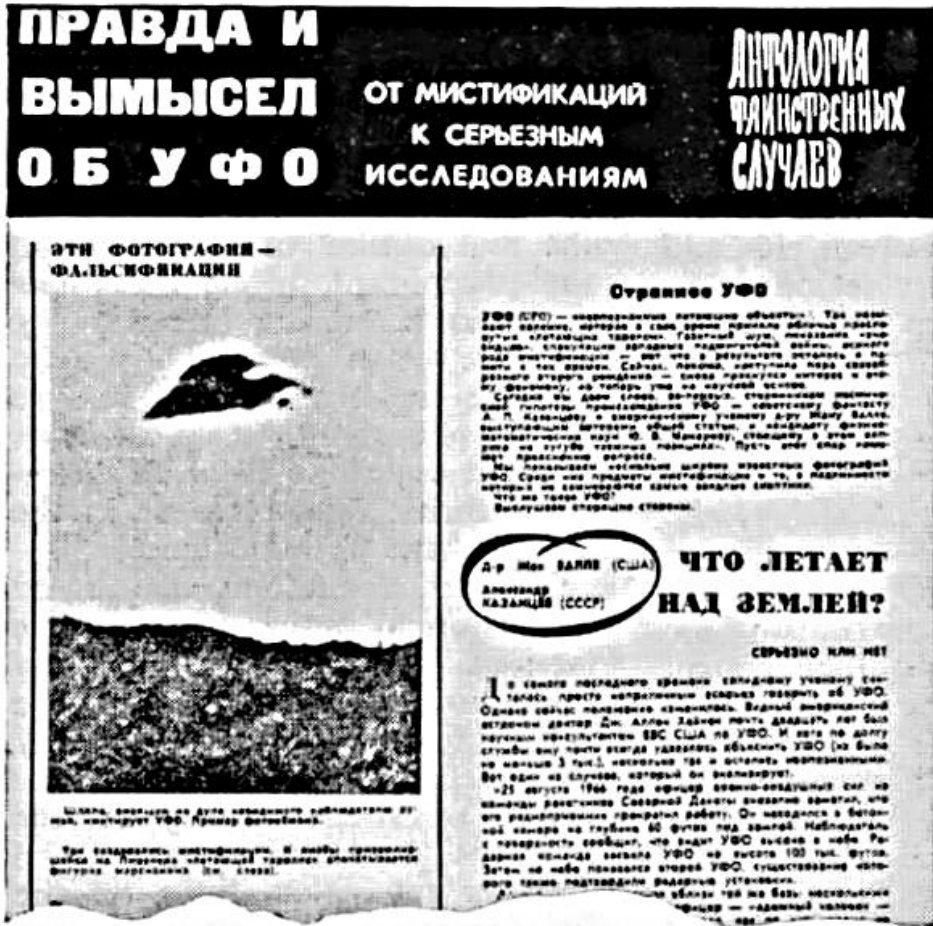


Motion was silent and, most strikingly to the hundreds of witnesses who filed reports, was horizontal -- flat & level. Always soon after sunset. Often a bright star preceded the 'half-moon shaped' UFO.

First seen on May 17, 1967. The phenomenon repeated itself on July 17, July 31, August 8, September 19 & 22, October 18 & 28, and then just seemed to stop.

Top Soviet scientists later concluded that no known natural or manmade stimulus could account for these unique "anomalous atmospheric phenomena."

August 1967 – UFOs hit the mainstream Moscow media



WHAT THE RUSSIANS ARE READING . . .

Our illustration shows part of the title page of an article on UFOs which appeared in the August 1967 issue of the Russian magazine **TEKHNIKA MOLODEZHI**.

The joint authors' names are ringed. Who are Жак ВАЛЛЕ & Александр КАЗАНЦЕВ? None other than Jacques Vallée and Aleksandr Kazantsev.

The lead article was republished in the Aug 24 issue of TRUD, the official labor paper

AT FIRST ARTICLES ONLY DISCUSSED SIGHTINGS IN OTHER COUNTRIES

THEN PEOPLE ASKED WHY, SINCE ADVANCED CULTURES WOULD BE COMMUNISTIC, THEY WEREN'T INTERESTED IN THEIR COMRADES ON THIS PLANET?

Gordon Creighton has translated the whole of the text, and tells us that the headings at the top of the page read, from left to right as follows:

Truth and Fiction about UFOs

From Hoaxes to serious investigation

Mystery Happenings Series

Dr. Felix Y. Zigel, Professor of Mathematics and Astronomy at the Moscow Aviation Institute, known as the father of Russian Ufology. In a November 10, 1967, broadcast on Moscow Central Television, with Soviet Air Force General Porfiri Stolyarov, Zigel stated:

Unidentified flying objects are a very serious subject which we must study fully. We appeal to all viewers to send us details of strange flying craft seen over the territories of the Soviet Union. This is a serious challenge to science and we need the help of all Soviet citizens. [Good, T., ibid.]

Soviet Life, Moscow's main propaganda magazine, featured a detailed account of the public responses to Zigel's appeal

At 8:40 PM on Aug 8, 1967, at the mountain station [astrophysical observatory, USSR Academy of Sciences, 12 miles from Kislovodsk, Caucasus] astronomer Anatoli Sazanov observed an **unfamiliar flying object**.

It was shaped like an asymmetrical **crescent**, with its convex side turned in the direction of its movement. Narrow, **faintly luminous ribbons** resembling the condensation trail of a jet plane followed behind the horns of the crescent. Its diameter was two-thirds that of the moon, and it was not as bright. It was yellow with a reddish tinge.

The object was **flying horizontally in the northern part of the sky**, from west to east, at about 20 degrees above the horizon. A bright star of the first magnitude was moving at a constant distance ahead of the crescent.

As it moved away from the observers, the crescent dwindled, turned into a small disc and then suddenly vanished.

The mysterious object was seen by ten of the station's scientific workers. It was also observed in Kislovodsk.

-- Soviet Life magazine (Moscow), Felix Zigel, Feb 1968, p. 23 -- 25

Flying Saucer Review May-June 1968, p. 28

U.S.S.R.

UFOs reported by astronomers, and other sources

The following report appeared in the *Soviet Weekly* of February 10, 1968 (editorial address: 3 Rosary Gardens, London, S.W.7).

"Unidentified flying objects are now so firmly established as a problem that an international effort is needed to solve it, says Assistant Professor Felix Zigel of the Moscow Institute of Aviation.

"'It is not ruled out,' he says, 'that the solution could lead to some radical rethinking, just as would the solution of the problem of quasars in astronomy or that of quarks in physics.'

"At first, reports of sightings of UFOs in the Soviet Union were the field only of individual 'enthusiasts', but last year a committee of scientists and other specialists was formed to make a systematic study of the reports.

"They have only some 200 'sightings' reported, but a preliminary analysis of them indicates that there is something needing thorough investigation.

Astronomers' observations

"On July 18, September 4, October 18 and other days of 1967, crescent-shaped UFOs were seen over southern parts of the Soviet Union, according to reports from the Mountain Astronomical Station near Kislovodsk, from the astronomical observatory in Kazan, and from several private individuals.

"The most characteristic type of UFO is a luminous orange-coloured crescent with a diameter of 15 to 20ft. of arc (about a quarter of a degree), flying with its outward bend first.

"Its surface is reported only a little less luminous than that of the Moon.

"The horns of the crescent throw out jets, sometimes with sparks. The outer contour of the crescent is sharp and the inner contour, blurred and wavy.

"Sometimes a bright flaming disc, preceded by a crescent is observed. And sometimes the crescent is preceded and flanked by what look like first-magnitude stars, which keep at a constant distance from it.

"Kazan astronomers, who carried out their observations from two points simultaneously, set the diameter of the crescent-shaped UFOs at 500-600 metres and their speed at some five kilometres a second.

"Assuming that the crescent is a luminous shock wave, the UFOs must fly at altitudes between 30 and 65 miles. Such objects could not have been made by man. They are definitely not sputniks or space rockets.

**"SUCH OBJECTS COULD NOT HAVE BEEN MADE BY MAN.
THEY ARE DEFINITELY NOT SPUTNIKS OR SPACE ROCKETS."**

American UFO books took up these Soviet UFOs....

- The Soviet "giant spaceships" rated a chapter named after them in Donald Keyhoe's 1973 book **Aliens From Space**. The usually highly regarded Keyhoe painted a scene at the Kazan Observatory (on the lower Volga River) at twilight on July 18, 1967:
- “Suddenly a huge flying object appeared, moving swiftly across the sky. As it passed the observatory its orange glow made it easily visible in the dusk. It was an amazing sight - an enormous crescent-shaped craft at least eight times larger than any known airplane. The horns of the crescent were pointed backward, emitting jetlike exhausts...
- “Confirmation of the giant spaceship's existence soon came from other astronomers. The diameter of the flying crescents were [sic!] between 500 and 600 meters (between 1640 and 1840 feet...)
- “Several times, Soviet astronomers had reported that the huge spaceships were preceded or flanked by smaller UFOs which kept precise formations, matching the crescents' terrific speeds.”

Western UFO experts agreed

- "Clearly, satellites and meteors can be ruled out. The astronomers' observation cannot be readily explained in any conventional terms." **Dr. James McDonald**, dean of American 'ufology' in the 1960's, congressional symposium in Washington, DC, 1968
- The Earl of Clancarty told the British House of Lords during a UFO debate on January 18, 1979: "In July, August, September and October 1967, giant space ships were seen over various parts of the USSR by astronomers and other witnesses" -- Brinsley LePoer Trench.



James McDonald's Case 24. Kislovodsk, Caucasus, August 8. 1967

“Zigel, who is affiliated with the Moscow Aviation Institute, reports ... a sighting at 8:40 p.m., 8/8/67, made by astronomer Anatoli Sazanov and colleagues working at the Mountain Astrophysical Station of the USSR Academy of Sciences, near Kislovodsk. Sazanov and ten other staff members watched an ‘asymmetric crescent, with its convex side turned in the direction of its movement’ moving eastward across the northern sky at an angular elevation of about 20 degrees. Just ahead of it, and moving at the same angular speed was a point of light comparable to a star of the first magnitude. The crescent-like object was reddish-yellow, had an angular breadth of about two-thirds that of the moon, and left vapor-like trails aft of the ends of the crescent horns. As it receded, it diminished in size and thus ‘instantly disappeared’.”

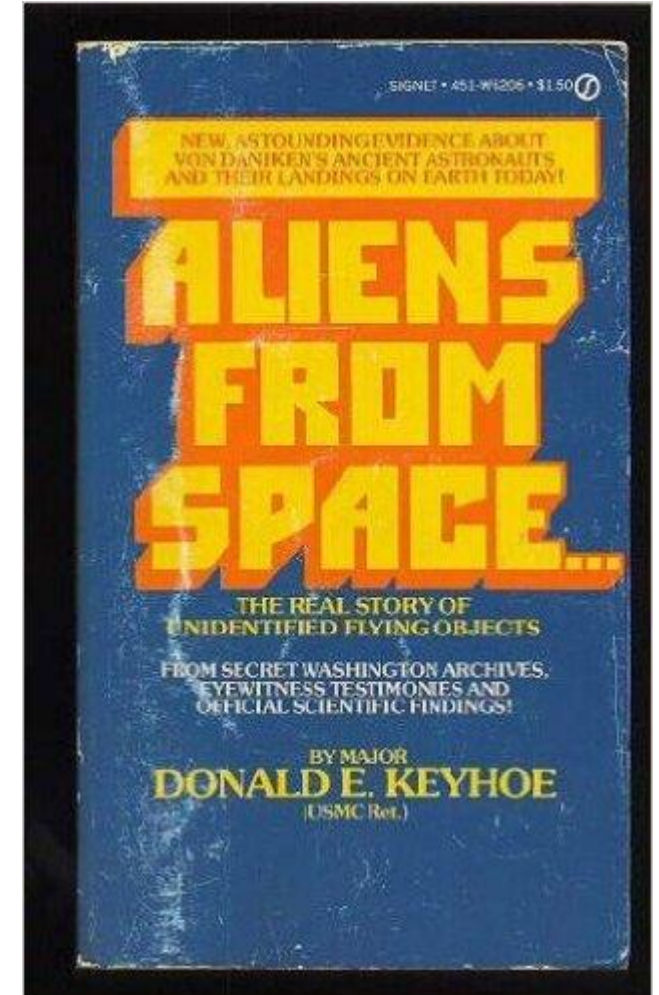


McDonald's Analysis --

- If we may accept as reliable the principal features of the sighting, **how might we account for it?**
- The "faintly luminous ribbons" trailing from the horns suggest a high-flying jet, of course; but the asymmetry and the reddish-yellow coloration **fail to fit** that notion. Also, it was an object of rather large angular size, about 20 minutes of arc, so that an aircraft of wingspan, say, 150 feet would have been only about five miles away whence engine-noise **would have been audible** under the quiet conditions of a mountain observatory.
- More significant, if it had been an aircraft at a slant range of five miles, and at 20 degree elevation, its altitude would have been only about 9000 ft above the observatory. For the latitude and date. **the sun was about ten degrees below the western horizon**, so direct sun-illumination on the aircraft at 9000 ft above observatory level would be out of the question.
- Hence **the luminosity goes unexplained.**
- Clearly, satellites and meteors can be ruled out.
- **The astronomers' observation cannot be readily explained in any conventional terms.**

Still respected by today's UFO experts....

- AMAZON review –
- By Reid M. Wilson on December 7, 2009
- “Chapter 9 -- Giant Spaceships (pages 127 -- 141) is the most interesting chapter in Donald E. Keyhoe's Aliens From Space book. The chapter starts with Soviet astronomers' observation of **huge flying crescents in 1967** that were calculated to be between 1,640 to 1,840 feet in size and to have a speed of 11,160 miles per hour. This chapter has the **most meaningful information about UFOs** in the book. “
- [JEO: An old complaint of mine is how authors take approximate values in metric, say, and arithmetically convert them to English units, accidentally adding the false impression the much more precise numbers must have been based on precision measurements.]
- https://www.amazon.com/Aliens-Space-Unidentified-Flying-Objects/dp/0385067518/ref=sr_1_2?s=books&ie=UTF8&qid=1479444230&sr=1-2&keywords=donald+keyhoe+aliens



Foreign press attention

WORLD-WIDE STUDY OF UFO DATA URGED BY RUSSIAN ASTRONOMER

ISGP section: [UFO press reports index](#)

The Washington Post
January 5, 1968

http://www.pehi.eu/UFOs/press_reports/1968_01_05_WP_Worldwide_Study_of_UFO_Data_Urged_by_Russian_Astronomer.htm

By Richard Longworth

MOSCOW (UPI) - Dr. Feliks Zigel, astronomy professor at the Moscow Aviation Institute, has released findings of a team of Soviet scientists of sightings of "luminous orange-colored" flying saucers over Russia.

He called for global investigation of the phenomena.

The statement by Zigel, issued to the foreign press through the news agency Novosti, follows revelation of Air Force Maj. Gen. Porfiry Stolyarov in November that an official commission has been established to investigate unidentified flying objects (UFO).

Washington Post, January 5, 1968

- Zigel reported that a "big team" of Soviet scientists and specialists has studied 200 reports of sightings - including observations by Kazan astronomers and the astronomical station near Koslovodsk of UFO seen over the Ukraine, Crimea, and Caucasus in July, September and October 1967.
- "The most characteristic type of UFO," wrote Zigel, "is a luminous orange-colored crescent with a diameter of 15 to 20 degrees of the arc, flying with its outward curve forward. Its surface is only a little duller than that of the moon.
- "The horns of the crescent throw out jets, sometimes with sparks. The outer contour of the crescent is sharp and the inner contour blurred and wavy.
- "A bright flaming disc preceded by a crescent is observed sometimes. Sometimes the crescent is preceded and flanked by what look like first-magnitude stars which keep at a constant distance from the crescent."
- **Zigel said studies have indicated that such objects "obviously could not have been made by man and are definitely not artificial earth satellites or space rockets."**

TIME Magazine chronicles it

TIME

Friday, Aug. 06, 2010

UFOs in the U.S.S.R.

By Kayla Webley

ZIGEL: "UNFORTUNATELY, CERTAIN SCIENTISTS BOTH IN THE SOVIET UNION AND IN THE UNITED STATES DENY THE VERY EXISTENCE OF THE PROBLEM INSTEAD OF HELPING TO SOLVE IT."

In 1967, a Soviet astronomer called for a "joint effort of all the scientists of the world" to determine the nature of unidentified flying objects. The scientist, Feliks Zigel, was so convinced of the existence of flying saucers that he said, "Unfortunately, certain scientists both in the Soviet Union and in the United States deny the very existence of the problem instead of helping to solve it." His concern was prompted by some 200 reported sightings of "a luminous orange-colored crescent" whose "surface is only a little duller than that of the moon." It was also said to "throw out jets, sometimes with sparks." Such suspicions eventually gave rise to a study commissioned by the Soviet authorities in 1978 to research paranormal phenomena. The resulting documents allegedly make clear the seriousness with which the Soviet government treated the prospect of an alien invasion.

http://content.time.com/time/specials/packages/printout/0,29239,2008962_2008964_2008960,00.html

BY WAY OF A DEDICATION

I do not want to give the impression I'm mocking Zigel and his associates. These research results reported here are actually dedicated to the legions of unsung and often anonymous worldwide chroniclers of 'UFO reports' and other anomalous observations which so often fall through the cracks of scientific attention. These people, numbering in the thousands, have labored tirelessly for decades to capture information they want not to be lost forever, in the hopes that someday it could be important in making sense of it. Without them, most of it WOULD have vanished from human consciousness. Perhaps the explanations offered here are not precisely in line with their own original expectations, but they are sincerely offered in fulfilment of their higher hopes that someday somebody would take real lessons from their efforts, and in keeping faith with them, would show their labors were not in vain. They WERE not in vain. Salute!

1967-1968: The “perfect storm” of Russian ufology

- At the height of Soviet triumph in the ‘Space Race’, the concept of alien space explorers had achieved enough ideological legitimacy to allow media discussion
- In a series of national television programs in late 1967 private researchers asked for public reports of UFOs to be sent to a newly-founded private organization headed by a retired Russian air force general
- Entirely by accident, something ELSE was happening.
- **New generations of Soviet military missile and space hardware were just beginning to appear in the skies, while military secrecy demanded that they not be seen**
- A collision of contradictory consciousness was inevitable

Khrushchev boast

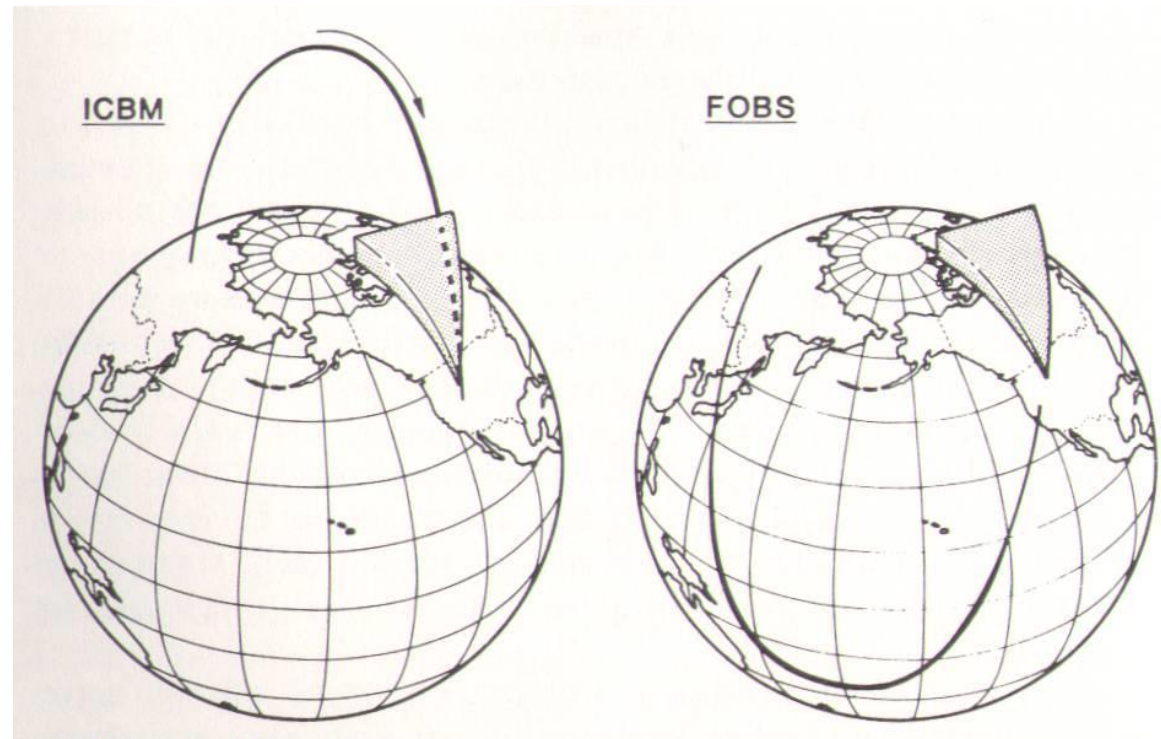
In March 1962, Soviet premier Nikita Khrushchev, having sparked the ‘missile race’ with the United States several years earlier, boasted, “We can launch missiles not only over the North Pole, but in the opposite direction, too...Global rockets can fly from the oceans or other directions where warning facilities cannot be installed. Given global missiles, the warning system in general has lost its importance. Global missiles cannot be spotted in time to prepare any measures against them.”



The Fractional Orbit Bombardment System - FOBS

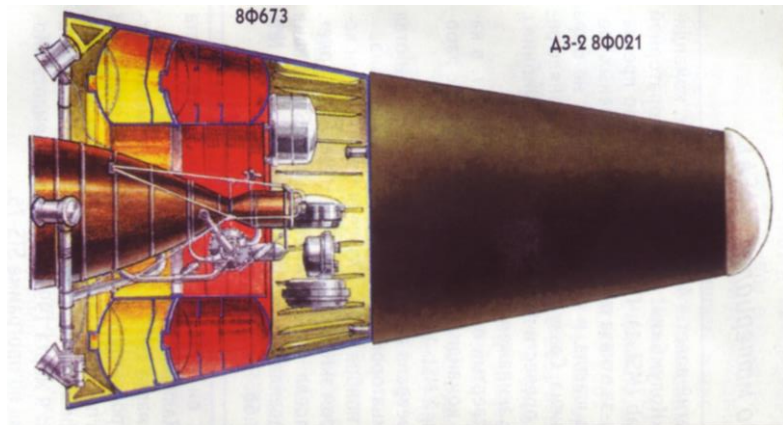


In the late 1960s the USSR tested & then deployed about 20 missiles with 'orbital warheads' -- despite a treaty outlawing them in orbit



FOBS warhead bus propulsion

- The 8F021 orbiting warhead had the Russian acronym **ОГЧ** [OGCh].
- It consisted of an SU equipment unit which oriented the spacecraft in orbit and autonomously determined when to make the braking maneuver to bring the re-entry vehicle down from orbit.
- The SU included an inertial navigation system and a radar altimeter which measured the altitude of the orbit and thereby determined when to make the braking maneuver.
- A solid fuel cartridge then spun up the turbine assembly of the liquid propellant (N₂O₄/UDMH) braking engine.
- Orientation was by 4 + 4 thrusters using turbine exhaust gases.



Mission

FOBS was never assessed as a precision weapon since the circular error probable (CEP – circle in which only 50% of the bombs will hit a fixed point) was more than three miles.

It wouldn't be used to destroy hardened US ICBM silos or other protected sites.

Instead, the US strategic planners and policy makers thought the more likely FOBS use would be as a 'pathfinder' to take out command and control centers like the numerous sites Washington, DC – the White House, Pentagon, etc.

Much like a World War II fighter sweeping enemy aircraft before the bombers come thorough, the FOBS would take out the ability to launch the retaliatory strike that was sure to come if the FOBS were detected.

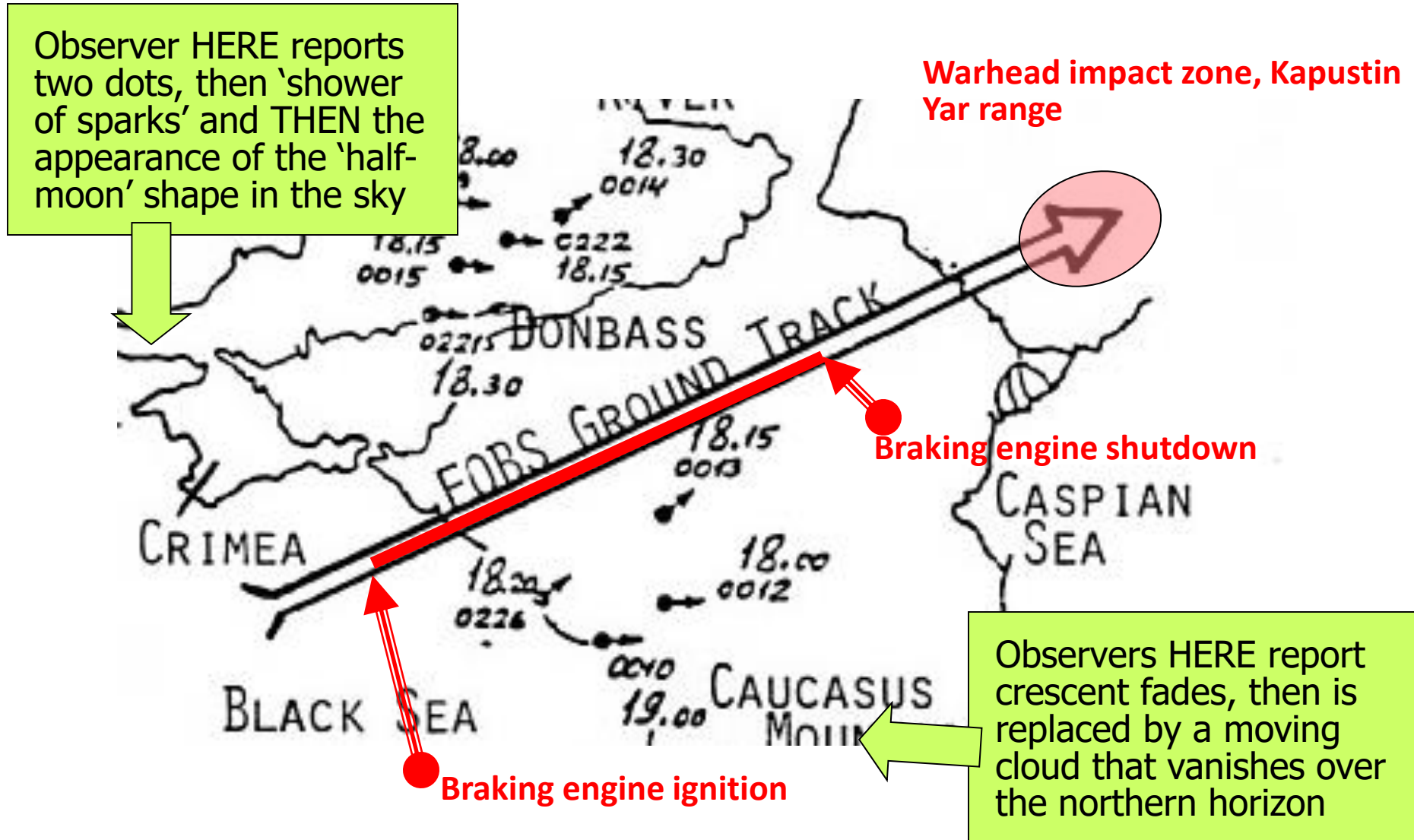
Russian military orbital bombing system

- The FOBS was the only orbiting military nuclear weapon ever deployed, although in order to remain legal under international treaties it was a 'fractional orbital' weapon. Although American infrared early warning satellites invalidated the 'surprise attack' component of the concept, 18 missiles were operational from 1969 to 1983.
- There were four launches in 1966 and 10 in 1967. The United States only publicly noted the probable FOBS mission of the tests on 3 November 1967. The system was formally accepted for military service on 19 November 1968. A military regiment to operate the missiles was formed in August 1971. The system was in service at 18 silos at Baikonur from 25 August 1969 to January 1983.
- <http://www.astronautix.com/o/ogch.html>

US National Intelligence Estimates [NIEs] did not expect the Russians to be so provocative

- July 1963: *Soviet Capabilities and Intentions to Orbit Nuclear Weapons*.
- This estimate examined possible launch systems, warhead yields and effects, and cost considerations, covering the period 1963-1964 as well as 1965-1970.
- Its primary conclusion was that the Intelligence Community had "acquired **no evidence** that the USSR plans **to orbit a nuclear-armed satellite in the near term**, or that a program to establish an orbital bombardment capability is **at present seriously contemplated** by the Soviet leadership."
- <http://nsarchive.gwu.edu/NSAEBB/NSAEBB501/>
- **They, along with millions of Russians along the flight path of the space-to-ground warhead tests, and Soviet military security officials dedicated to keeping such programs hidden, were in for a SERIES of big surprises**

Reconstruction of FOBS test warhead entry events that sparked mass public awe on the ground below

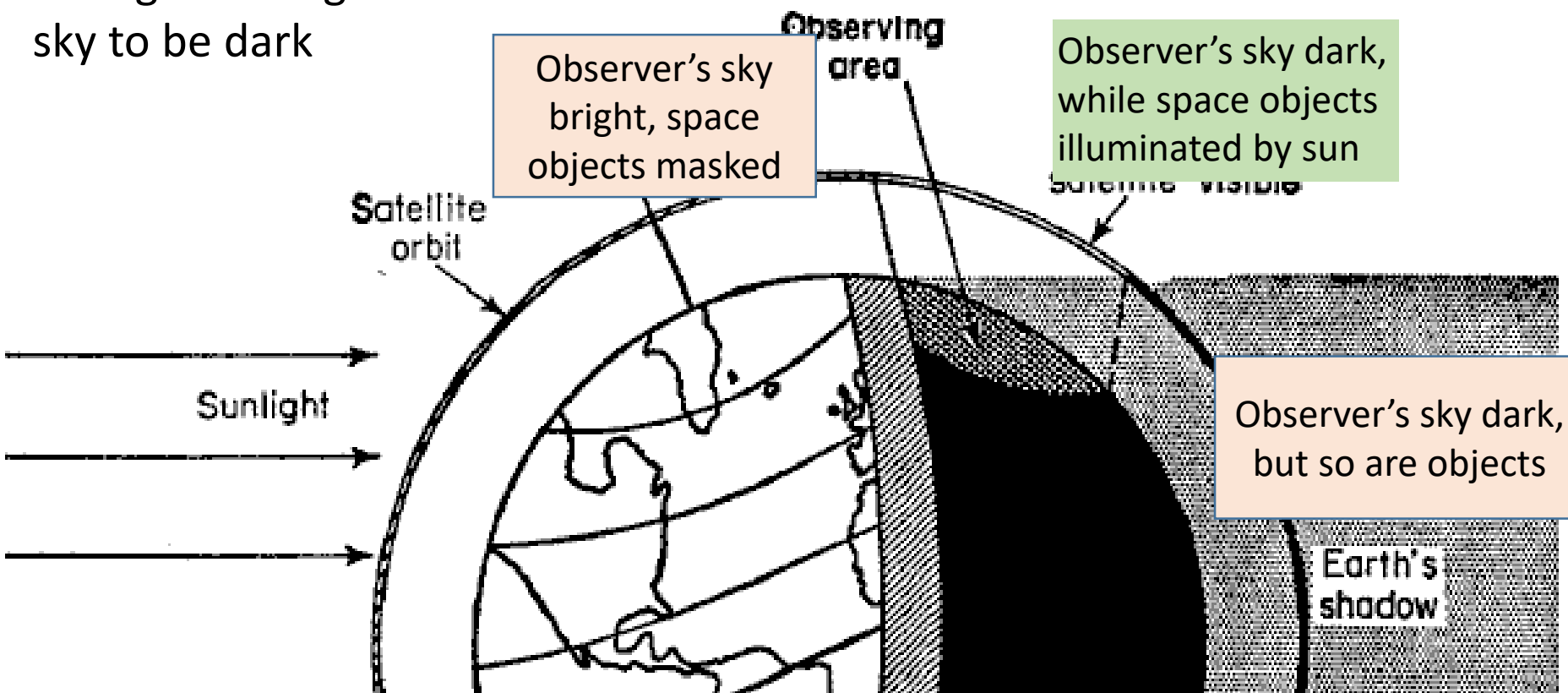


One more special circumstance that made these test flights so widely visible – twilight backlighting

As with observing artificial satellites, the cloud must be high enough to be sunlit while the observer is far enough into night for the sky to be dark

THIS IS A NARROW 'WINDOW' DEPENDING ON SEASON AND CLOCK TIME, PERHAPS A 4-5% CHANCE AT RANDOM FOR ANY GIVEN DATE. IN 1967 ALL TEN LAUNCHES HIT THAT WINDOW.

THE FOBS APPARITIONS WERE EVEN LOWER THAN ORBITING SATELLITES, AS THEY ENCOUNTERED AERODYNAMIC FORCES ABOUT 100 km HIGH. BUT THAT WAS STILL HIGH ENOUGH FOR THE SUN ALREADY SET FOR OBSERVERS BELOW TO STILL BE IN LINE-OF-SIGHT WITH THE FOBS VEHICLE – AND LIGHT IT UP AGAINST THE STARRY SKY.



Potential rationale for choosing twilight

- Optical ground tracking opportunities?
- Onboard sensors?
- Touchdown conditions [search & recovery?]
- ?
- ?
- ? TBD

Unknown cause of highly unusual 'space cloud'

- Ascent rocket plumes have distinctive tadpole shape
- Surplus fuel dump clouds quickly dissipate
- ICBM warhead spin-up motors fire briefly & dissipate
- Occasional upper stage tumble can create spiral pattern
- Reentry causes single or multiple horizontal fireball
- BUT
- **Wide crescent shape cloud was not observed elsewhere ever**
- **COULD IT BE CONNECTED WITH UNIQUE MISSION DESIGN?**

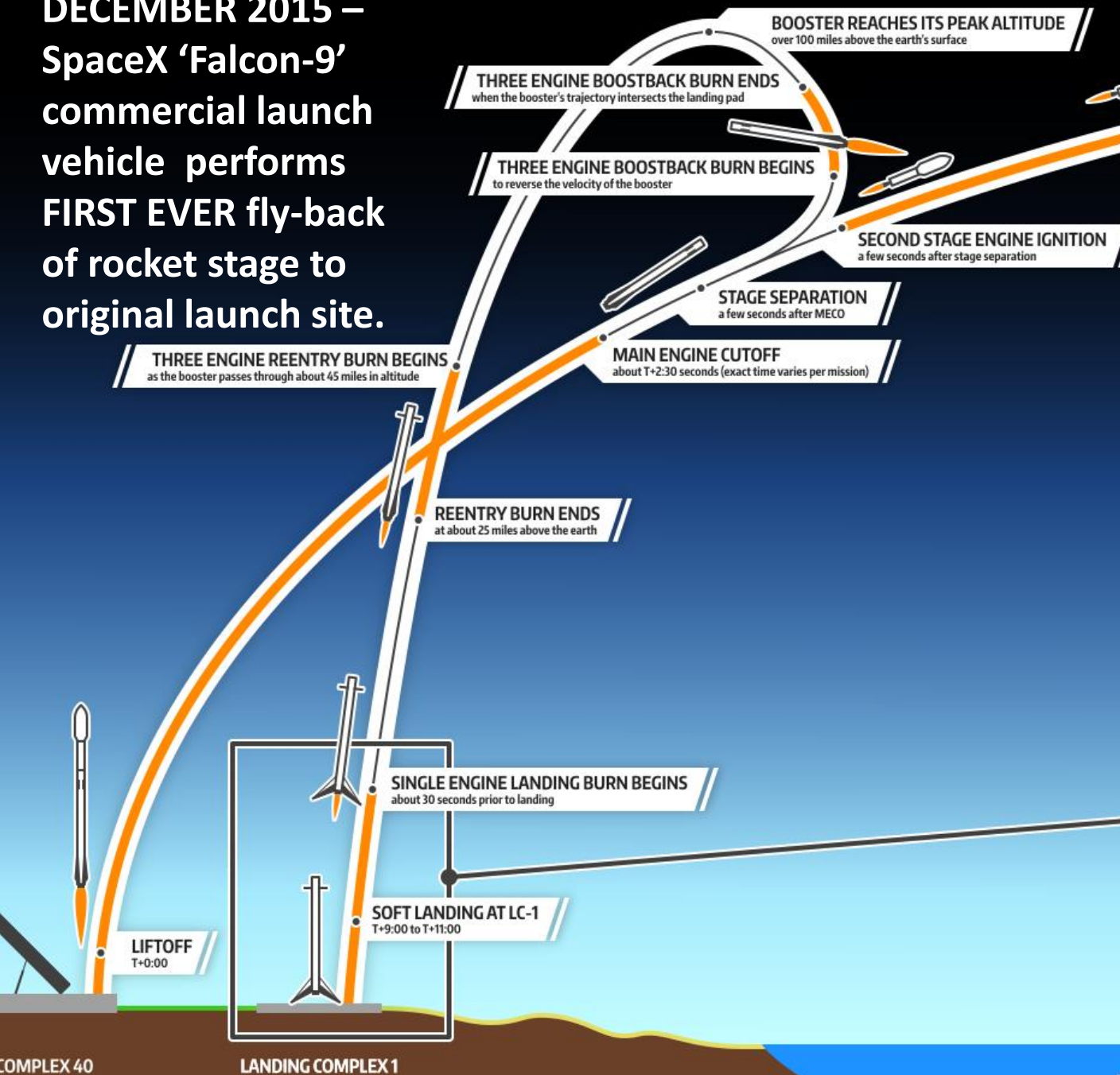
Thrusting strategies for de-orbit burns

- Background – The most efficient de-orbit thrusting strategy has always been to make a retrograde burn [‘retrofire’] at the opposite side of the Earth from your planned landing point
- This lowers the opposite side of your orbital path into the upper atmosphere [approx. 100 km] and aero braking does the rest
- The long shallow descent through varying atmospheric density can introduce large dispersions of the aim point
- For a space-to-ground weapon, a FASTER descent path – one that is much less trackable and predictable – is to burn downwards, closer to target
- It may use twice as much fuel but has much better chance of evading defensive systems

FOBS -- the descent phase

- Prior to braking the FOBS is 135 km high travelling level
 - The FOBS deorbit was very steep and rapid.
 - Braking engine has known characteristics (75.5 kN, 3060 m/s V_e , 24.7 kg/s):
 - A 60 second burn of the retro with a 1450 kg payload uses 1480 kg of propellant, giving around 2 km/s of delta-V.
 - The object travels approx 500 km during this phase
 - If retro stage is 2500 kg full 1000 kg empty, then we have 1.4 km/s of delta-V;
 - if this impulse is applied downwards, this results in an orbit that would dip 850 kilometers below Earth's surface (naturally, impossible)
 - The object enters thick atmosphere in approx 45 seconds, about 400 km along
 - That trajectory results in ground impact in 1.5 minutes from end of burn
 - This is consistent with the separation-to-impact time reported in declassified CIA documents.
- Jonathan McDowell, Center for Astrophysics, Harvard // email December 26, 2006 11:55 PM

DECEMBER 2015 –
SpaceX ‘Falcon-9’
commercial launch
vehicle performs
FIRST EVER fly-back
of rocket stage to
original launch site.

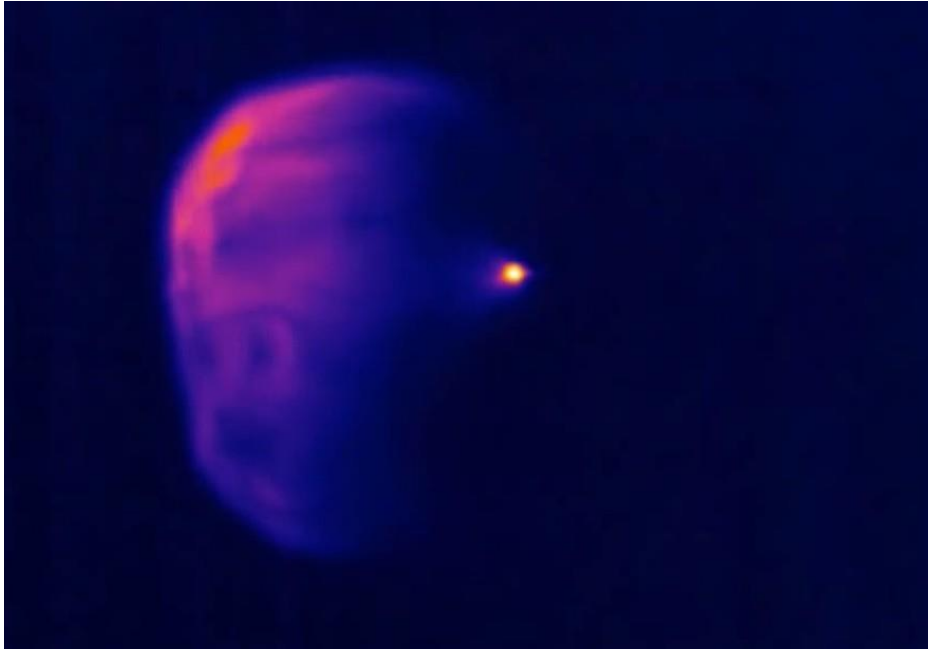


SO: What do reentering
FORWARD-THRUSTING
spacecraft look like?
NOW WE KNOW.

RETURN TO LAUNCH SITE
REQUIRED ROCKET TO FIRE
ITS ENGINES ‘INTO THE
WIND’ DURING DESCENT –
CREATING A NEVER-SEEN-
BEFORE CRESCENT CLOUD.



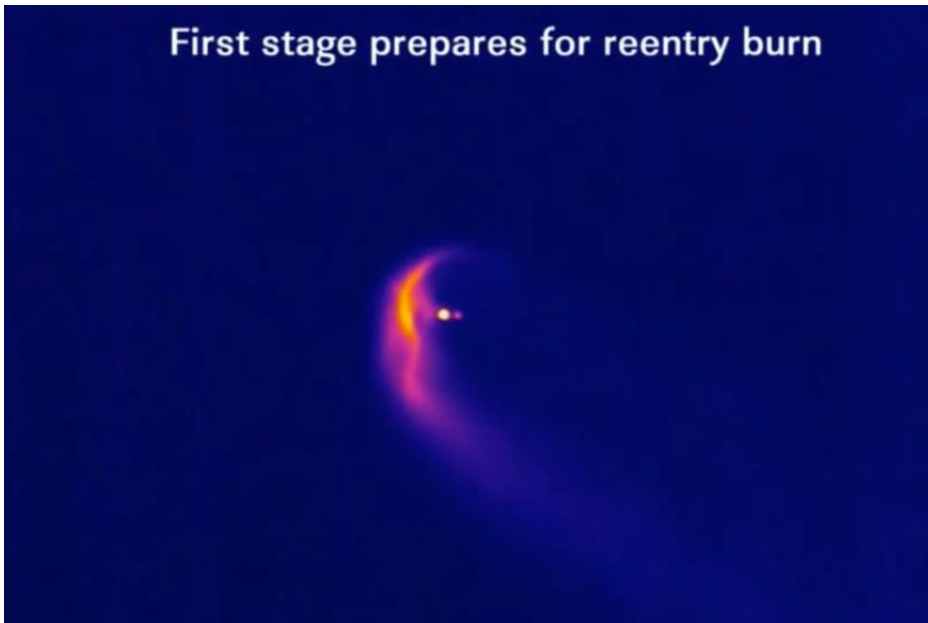
Falcon-9 return to launch site plume views



INFRA-RED CAMERA
MAKES THRUSTING
STAGE [CENTRAL
DOT] VERY MUCH
BRIGHTER THAN IT
WOULD LOOK TO
THE NAKED EYE

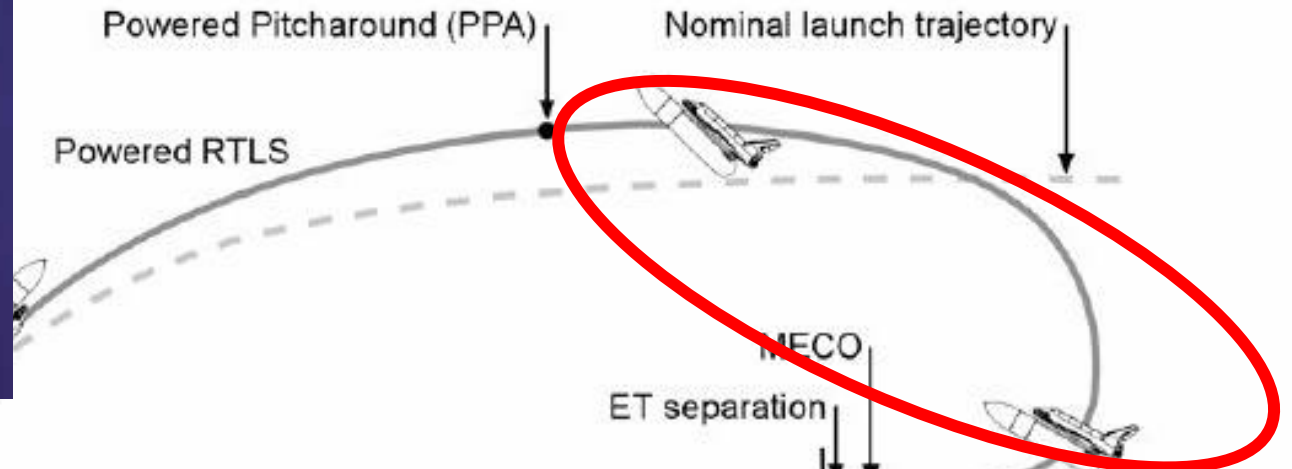


First stage prepares for reentry burn

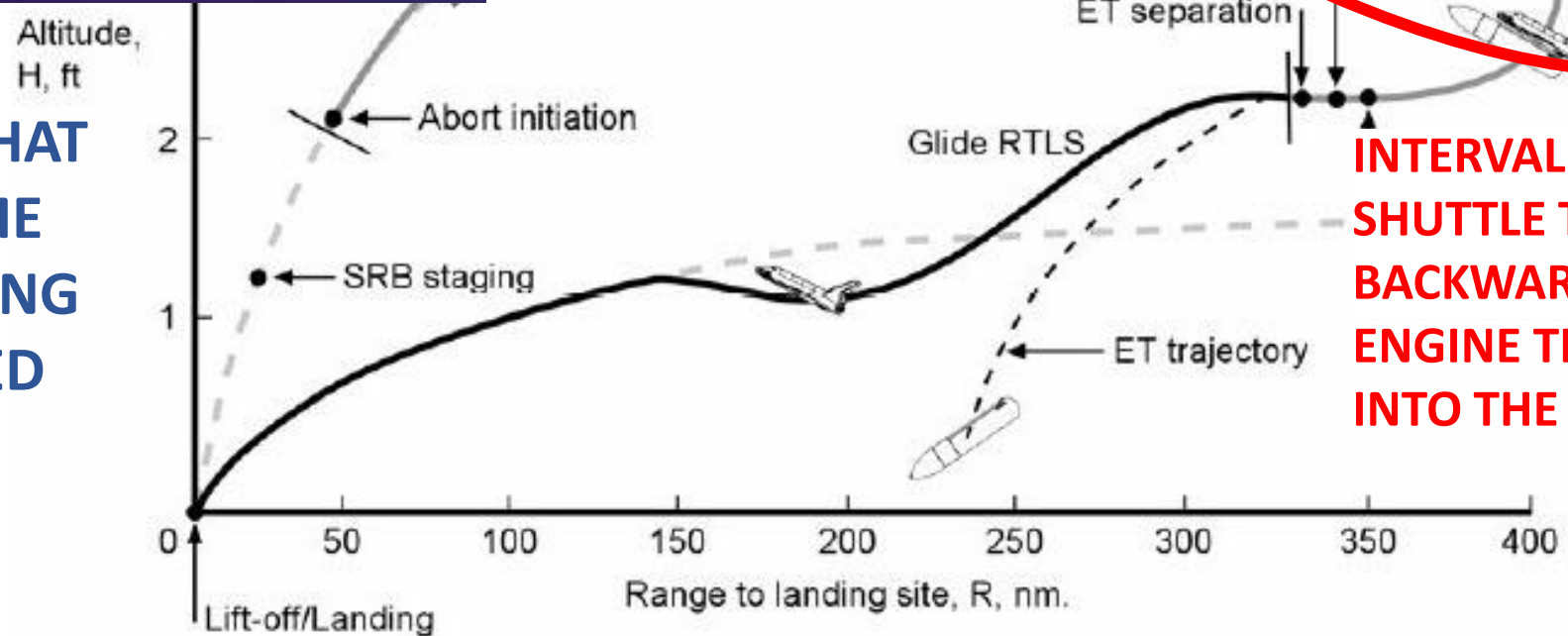




NASA emergency plan to turn shuttle around and return to launch site [RTLs] – never actually tested

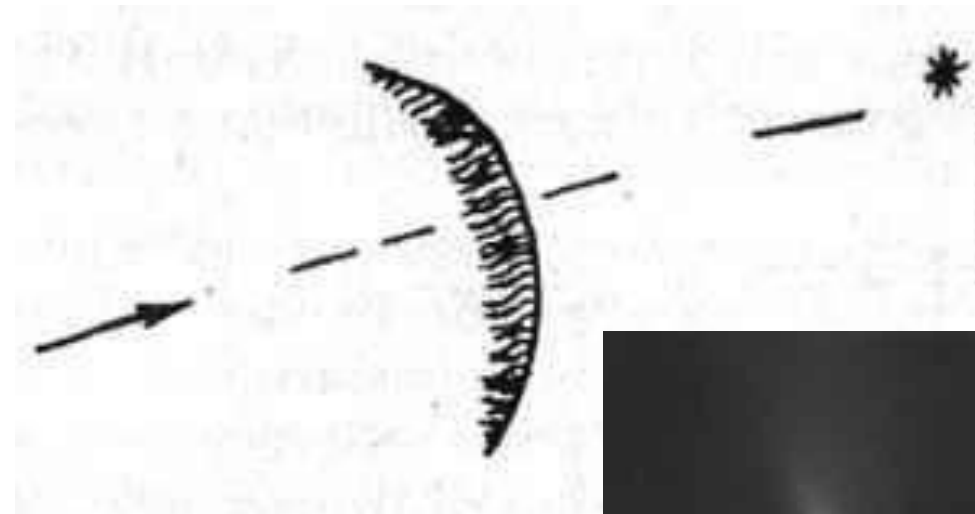


ARTIST CONCEPT OF WHAT REVERSE-THRUST PLUME MIGHT LOOK LIKE DURING EMERGENCY HIGH SPEED REVERSAL MANEUVER

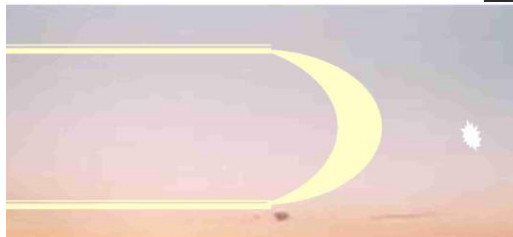


INTERVAL WHEN SHUTTLE TO FLY BACKWARDS WITH ENGINE THRUSTING INTO THE WIND

HYPOTHESIS == The bizarre 1967 'crescent cloud' sightings in the USSR were authentic descriptions of rocket engine on a vehicle firing during descent



LEADING 'STAR' WAS
PROBABLY UPPER STAGE
OF LAUNCH VEHICLE



Satellite	COSPAR	Date	LS	
OGCh #1	N/A	16.12.1965	Ba LC-67/21	*
OGCh #2	N/A	05.02.1966	Ba LC-67/21	*p
<i>OGCh #3</i>	<i>N/A</i>	<i>16.03.1966</i>	<i>Ba LC-67/21</i>	<i>*F%</i>
OGCh #4	N/A	19.05.1966	Ba LC-67/22	*
OGCh #5 (U 1)	1966-088A	17.09.1966	Ba LC-162/36	P
OGCh #6 (U 2)	1966-101G	02.11.1966	Ba LC-162/36	P
Kosmos 139 (OGCh #7)	1967-005A	25.01.1967	Ba LC-162/36	
<i>Kosmos (151) (OGCh #8)</i>	<i>1967-F02</i>	<i>22.03.1967</i>	<i>Ba LC-161/35</i>	<i>F</i>
Kosmos 160 (OGCh #9)	1967-047A	17.05.1967	Ba LC-161/35	
Kosmos 169 (OGCh #10)	1967-069A	17.07.1967	Ba LC-162/36	
Kosmos 170 (OGCh #11)	1967-074A	31.07.1967	Ba LC-161/35	
Kosmos 171 (OGCh #12)	1967-077A	08.08.1967	Ba LC-162/36	
Kosmos 178 (OGCh #13)	1967-089A	19.09.1967	Ba LC-161/35	
Kosmos 179 (OGCh #14)	1967-091A	22.09.1967	Ba LC-162/36	
Kosmos 183 (OGCh #15)	1967-099A	18.10.1967	Ba LC-161/35	
Kosmos 187 (OGCh #16)	1967-106A	28.10.1967	Ba LC-162/36	
Kosmos 218 (OGCh #17)	1968-037A	25.04.1968	Ba LC-162/36	
OGCh #18	N/A	20.05.1968	Ba LC-162/36	*
OGCh #19	N/A	27.05.1968	Ba LC-161/35	*
Kosmos 244 (OGCh #20)	1968-082A	02.10.1968	Ba LC-161/35	
Kosmos 298 (OGCh #21)	1969-077A	15.09.1969	Ba LC-191/66	
Kosmos 354 (OGCh #22)	1970-056A	28.07.1970	Ba LC-191/66	
Kosmos 365 (OGCh #23)	1970-076A	25.09.1970	Ba LC-191/66	
Kosmos 433 (OGCh #24)	1971-068A	08.08.1971	Ba LC-191/66	

FOBS flight test program

Explain different missions
Each mission to be described shortly....

Brief overview TBS

http://space.skyrocket.de/doc_sdat/ogch.htm

SHORT ANSWER

- The exact FOBS missions and the approximate times of their overflights [launch plus 95 minutes] are:
- Cosmos- 160, May 17 at 8:45 p.m.;
- Cosmos-169, July 17 at 9:30 p.m.;
- Cosmos-170, July 31 at 9:30 p.m.;
- Cosmos-171, August 8 at 8:45 p.m.;
- Cosmos-178, September 19 at 7:30 p.m.;
- Cosmos- 179, September 22 at 6:50 p.m. (no reports - it may have been overcast);
- Cosmos-183, October 18 at 6:10 p.m.;
- Cosmos-187, October 28 at 5:50 p.m.

NOW TAKE THESE TWO SEPARATE SOVIET
ACTIVITIES, ABSOLUTELY UNRELATED TO
EACH OTHER, AND MIX – OH, ADD ONE
MORE EVEN MORE EXPLOSIVE FACTOR.

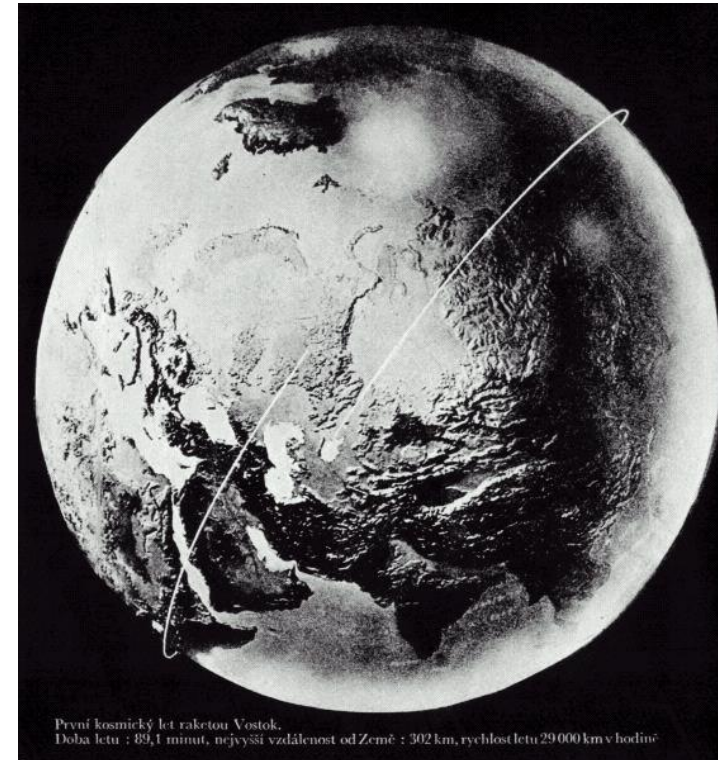
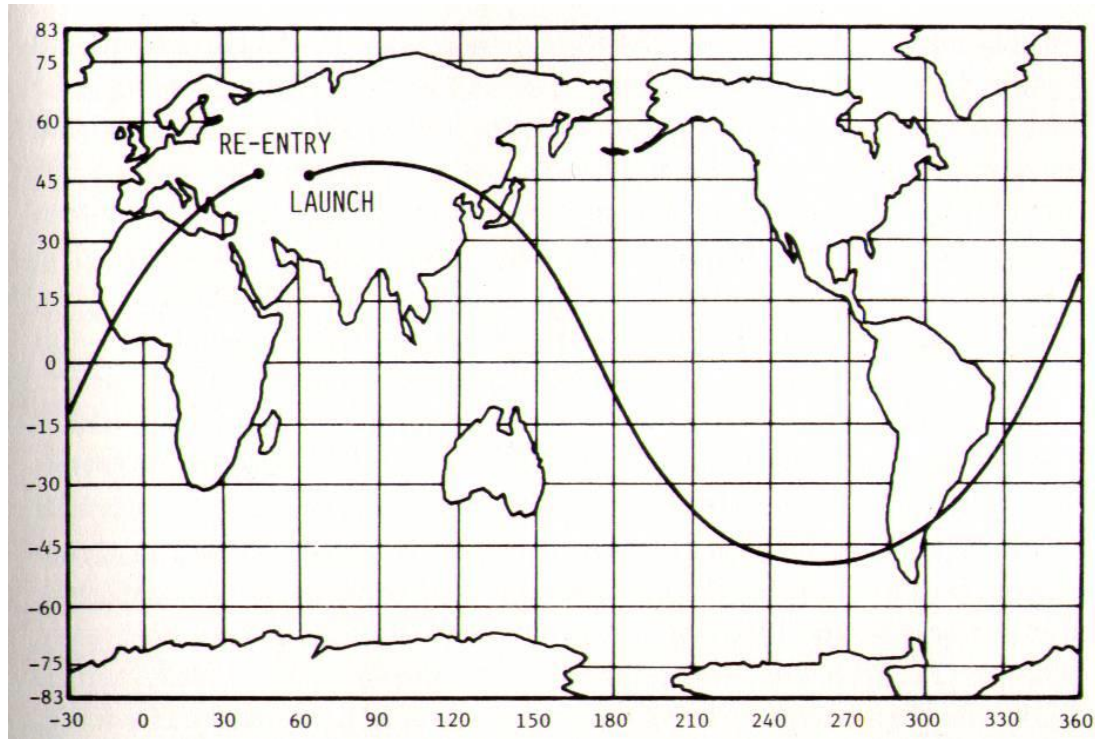
**SPECIAL SENSITIVITY IN BOTH
MOSCOW AND WASHINGTON
ABOUT THIS WEAPON**

Invention and purpose of the terminology “Fractional Orbit Bombardment System”

- The word ‘fractional’ refers to less-than-one complete orbit of Earth
- This allowed American lawyers in the Lyndon B. Johnson State Department to argue that such activity was not constrained by international treaties banning placement of nuclear weapons ‘in orbit’.
- Otherwise they would have had to confront the Soviets over their potential violation of the recently signed treaty – by developing a system manifestly designed to put nuclear weapons into orbit
- Moscow officials never used the term, and officially always referred to these launches as scientific space missions under the ‘Kosmos’ program – a program name exclusively used by earth satellites
- Arms-control advocates argued that even if the weapon WERE used, it would only be in wartime when such treaties were no longer in effect – so it’s existence was not a violation of the existing treaty they had authored
- Moscow avoided the controversy by just lying about the objects to the UN

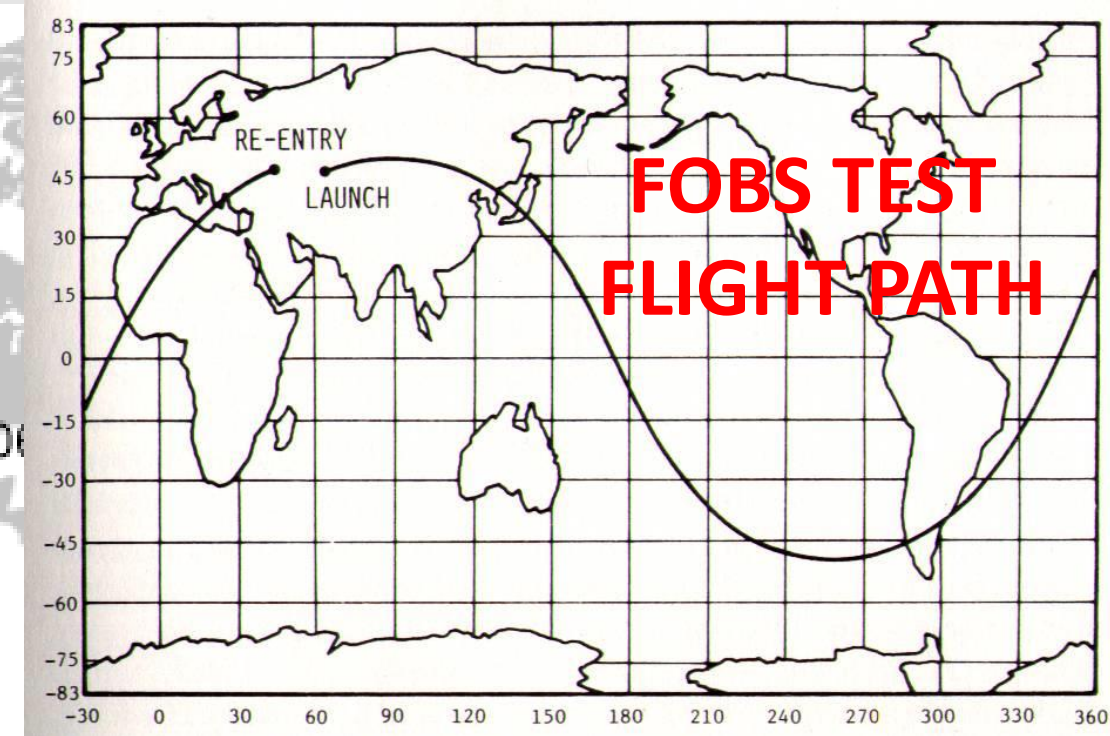
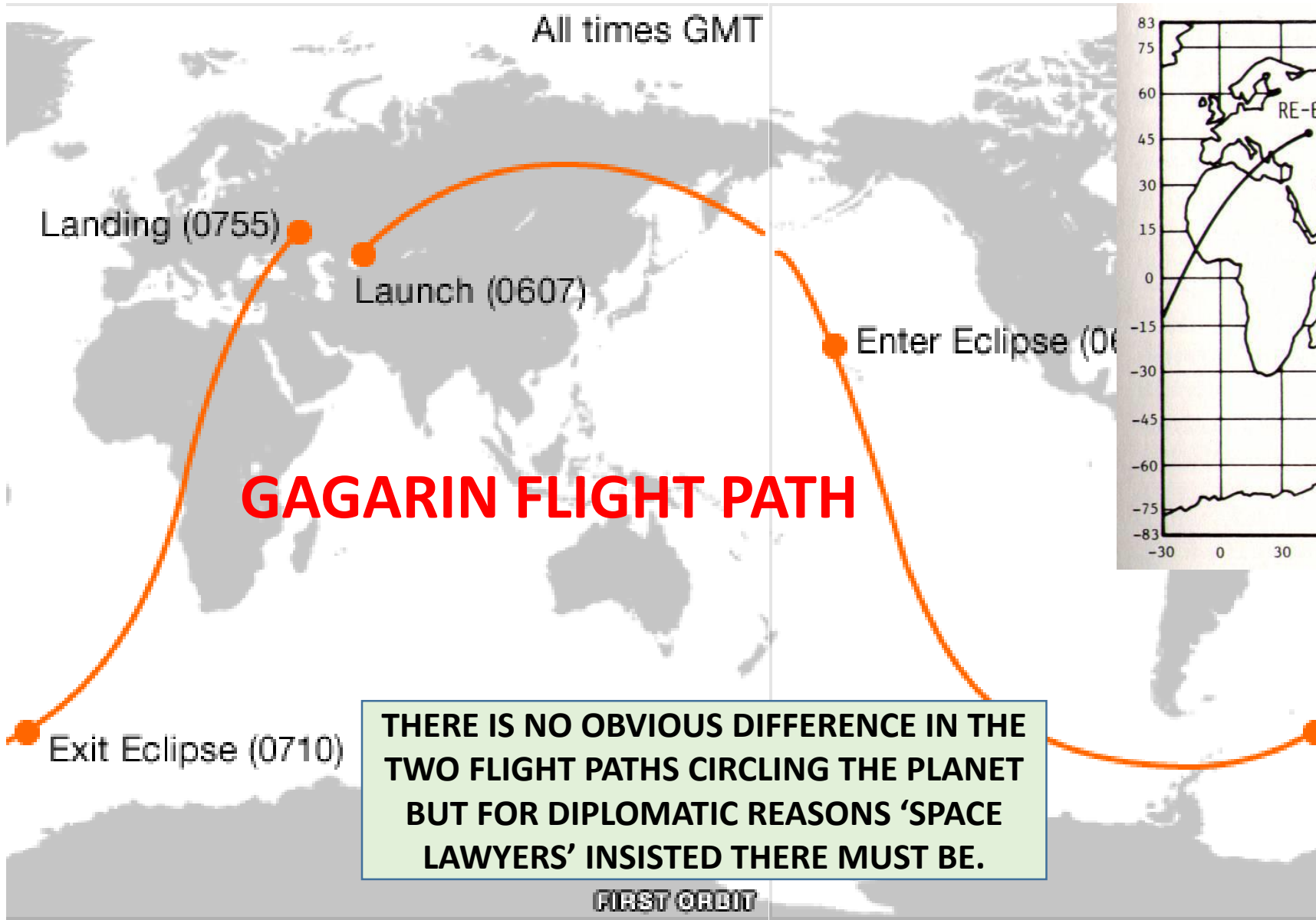
Was the FOBS Ever “In Orbit”?

SecDef McNamara’s team argued objects weren’t ‘in orbit’ because they never completed a full orbit



Then neither did Gagarin,
‘first man to orbit Earth’

April 12, 1961 – Gagarin first man to orbit the Earth
January 25, 1967 – First satellite NOT to orbit Earth



THERE IS NO OBVIOUS DIFFERENCE IN THE TWO FLIGHT PATHS CIRCLING THE PLANET BUT FOR DIPLOMATIC REASONS 'SPACE LAWYERS' INSISTED THERE MUST BE.

DURING THE HOUR AND A HALF OF ORBITAL FLIGHT. THE EARTH ROTATED ABOUT 22 DEGREES EASTWARDS, 'MOVING THE GOAL POSTS' AWAY FROM THE SPACE VEHICLE THAT TRAVELED >360 DEGREES IN ITS FULL ORBIT.

Why 'fractional' was a false exemption

- The quibbling by the American arms-control advocates was spurious.
- The objects were 'in orbit' by dynamic reality, once their booster rocket had delivered them to space with the proper "orbital velocity".
- Physically, they DID complete more than one full circuit of Earth anyway.
- The touchdown point was west of the launch site only due to Earth's eastward rotation in the hour and a half of flight.
- In an inertial reference frame the flight path was greater than 360 degrees.
- The actual flight path was nearly identical to that of Yuri Gagarin in 1961 who also landed near the Volga River [well west of Baykonur].
- Gagarin was touted by Moscow as the first man to orbit the Earth.
- By camouflaging the missions 'Kosmos' launchings, the USSR had officially designated them as part of an earth satellite program
- Years later, the official designation of the spacecraft was revealed as **OGCh (Orbital'noy Golovnoy Chasti) – ORBITAL WARHEAD SECTIONS**

THIS 'DANCE OF LEGALITY' SHOWS HOW SENSITIVE THE PROGRAM WAS TO WORLD DIPLOMACY & THE THERMONUCLEAR 'BALANCE OF TERROR'. PROBABLY THAT'S WHY BOTH MOSCOW AND WASHINGTON WANTED AS LITTLE PUBLIC ATTENTION AS POSSIBLE ON IT AND ON ITS FRIGHTENING IMPLICATIONS.

EVEN MORE THAN MERELY A TOP SECRET WEAPONS TECHNOLOGY, THE PROGRAM'S VERY EXISTENCE WAS ALARMING. THAT'S BECAUSE SINCE IT RELIED ON STEALTH, **IT WAS USEFUL ONLY FOR 'SNEAK ATTACK' – FOR A NUCLEAR FIRST BLINDING STRIKE ON THE UNITED STATES. THIS IMPLIED "FIRST-USE" INTENT.**

WORSE, BECAUSE ITS DESIGN RELIED ON EXPLOITING A **TEMPORARY SITUATION** [NO SOUTHERN US RADAR AGAINST MISSILE ATTACK FROM THAT DIRECTION] IT WAS OBVIOUSLY RELYING ON A SHORT TERM ADVANTAGE THAT WOULD IN ONLY A FEW YEARS BECOME LARGELY OBSOLETE AS NEW RADARS WERE DEPLOYED.

IT WAS THUS A 'USE IT TODAY OR LOSE IT TOMORROW' CAPABILITY.

Shuffling towards cultural collision....

- By the middle of 1967, Soviet military missile teams had begun successful test flights of the most provocative nuclear weapon in history
- Knowledge of the weapon's capabilities would have spelled out the near-term acquisition of a credible decapitating sneak attack
- They conducted the tests in regions deep within their country to exclude foreign watchers who might learn too much too soon
- And then along came Felix Zigel and his sky-watching friends....

FLYING SAUCER REVIEW

Vol. 13, No. 6 November/December, 1967 13th Year of Publication

Top British UFO magazine

LATE NEWS — OFFICIAL RUSSIAN MOVE ON UFOs

Brief radio news items on Sunday, November 12, 1967, gave the long-awaited, but nonetheless remarkable news that the government of the Soviet Union is taking flying saucers very seriously.

The article by Dr. Fyodor Yu. Zigel which appeared in *Smena* earlier this year, and which was discussed in our July /August issue, left no doubt that the earlier tendency to scoff at the subject was a thing of the past, and that there had been many Russian UFO reports, some of which were confirmed by radar. The tone of this article, which was one of a series edited by Prof. B. P. Konstantinov, Vice-President of the Soviet Academy of Sciences, confirmed the feeling we have had ever since the Academy started taking FLYING SAUCER REVIEW in 1963, that Russia would organise an official study of the problem. The existence of such a study was announced on November 12.

On Monday, November 13, the British Press gave much publicity to this news. *The Times* devoted one of its editorials to the topic, and, after suggesting that the Russian commission will "serve the same function as the equivalent bodies in the British and American defence ministries," the leader-writer concluded: "UFOs . . . must have some explanation, else the Russians would never have set up a commission to examine them."

While heartily endorsing the latter sentiment, we suspect the Soviets have no intention that their commission should develop into another Project Blue Book, with instructions to the officer in charge to debunk flying saucers.

The Daily Express published an interesting account from their representative in Moscow, Mr. Roy Blackman, who wrote to say that Russia is to open the world's first UFO detection agency. He went on to tell how it was revealed over the weekend that a Soviet scientific commission will in future investigate all corroborated sightings of UFOs over the Soviet Union. The commission, he said, is headed by Air Force General Anatoli Stolyerov. The establishment of the agency, added Mr. Blackman, represents a rethinking by Soviet scientists on flying saucers, which have always previously been ridiculed, and he concluded his piece with a reference to the Zigel article, and the new appraisal revealed therein.

One of our friends, recently in Moscow, had given us prior notice, in a letter dated October 25, that a permanent commission had been established on October 18. We also understand, from other sources, that General Stolyerov's No. 2 is the distinguished Dr. Zigel, and that among others the committee includes an unnamed Russian cosmonaut and 18 scientists and astronomers. There will also be 200 qualified observers throughout the country, and the Commission will be particularly interested in persistent reports from the Caucasus, the Urals and Central Asia.

"... the commission will be particularly interested in persistent reports from the Caucasus, the Urals, and Central Asia."



WHAT COULD POSSIBLY NOW GO WRONG??

<http://www.noufors.com/Documents/Books,%20Manuals%20and%20Published%20Papers/Specialty%20UFO%20Publications/Flying%20Saucer%20Review/FSR,1967,Nov-Dec,V%2013,N%206.pdf>

Anonymous Russian UFO researcher, 1972 report RIAP Bulletin 1998 Vol 4, No. 3, pp. 13-16

- **November 10, 1967**, P.A.Stolyarov and F.Y.Zigel appeared on Central TV. They informed the audience of the UFO Department's birth and appealed to witnesses of UFO sightings, asking them to send in their reports. Subsequently these reports formed the basis for the first collection of UFO observations in the USSR containing some two hundred UFO reports, printed on an offset duplicator in a very limited number of copies.
- Zufar Kadikov, an astronomer of Kazan Station-Observatory, when observing recurrent flights of crescent-shaped UFOs, determined some linear parameters of the latter: speed (5 km/sec), altitude (100-120 km) and the size of the crescent (some 600 m). These figures and the shape of the object do rule out such explanations as "an artificial satellite, a booster rocket, a weather balloon". [Zigel F.Y. *UFO Observations in the USSR*. Vol. 1, p. 51, 63.]
- *October 1972, Smolensk, ANONYMOUS* [use wayback to get archive version] <http://www.geocities.com/riap777/shame.html>

FOBS flight test program begins -- March 1965

- **1965 March 5** - . *Launch Site: Baikonur. Launch Complex: Baikonur LC67/21. LV Family: R-36. Launch Vehicle: R-36O 8K69.*
- *FAILURE: Second stage propellant leak led to a fire in the silo..*
- *Failed Stage: 2.*
- **First attempted launch of Fractional Orbital Bombardment System booster.** - . *Mass: 1,700 kg (3,700 lb). Nation: Russia. Agency: RVSN. Spacecraft Bus: [OGCh](#). Spacecraft: [OGCh](#). COSPAR: F19650305.*
- A fire broke out during fuelling and the rocket exploded, seriously damaging the launch pad at Area 67..

Suborbital flight tests

- The second stage of the booster places the third stage and dummy warhead on a depressed trajectory with a range of 8500 km but an altitude of only 220 km (versus 800 to 1200 km for an optimum ballistic trajectory). The third stage then executed a 180 degree turn and its engines were fired to further brake the warhead to an impact on the Kamchatka peninsula. The second stage meanwhile continued on to reentry over the Pacific Ocean.
- *Launch Site: [Baikonur](#). Launch Complex: [Baikonur LC67/21](#). LV Family: [R-36](#). Launch Vehicle: [R-36O 8K69](#) Mass: 1,700 kg (3,700 lb). Nation: [Russia](#). Agency: [RVSN](#). Spacecraft Bus: [OGCh](#). Spacecraft: [OGCh](#)*
- **1965 December 16 - OGCh No. 01L** - .. COSPAR: U651216A. Apogee: 200 km (120 mi). First suborbital test of the FOBS system. Impacted within specification CEP in target zone..
- **1966 February 5 - OGCh No. 02L** -.. COSPAR: U660205A. Apogee: 200 km (120 mi). Second suborbital test of the FOBS system..
- **1966 March 17 - 22:00 GMT - OGCh No. 03L** - .. COSPAR: U660316A. Apogee: 0 km (0 mi). Last of three suborbital flight tests of the FOBS system.

Orbital missions begin

- All the orbital missions had the same technical specs as recorded on Encyclopedia Astronautica [so this won't be repeated a dozen times]:
- *Launch Site:* [Baikonur](#).
- *Launch Complex:* [Baikonur LC162/36](#).
- *LV Family:* [R-36](#). *Launch Vehicle:* [R-36O 8K69](#).
- **OGCh** - . *Mass:* 1,700 kg (3,700 lb).
- *Nation:* [Russia](#). *Agency:* [RVSN](#). *Class:* [Military](#).
- *Type:* Orbital bombing system.
- *Bus:* [OGCh](#). *Spacecraft:* [OGCh](#).

First orbital mission

- **1966 September 17** 22:35 GMT . *Decay Date:* 1966-11-11 .
- *USAF Sat Cat:* 2437 . *COSPAR:* 1966-088A.
- *Apogee:* 792 km (492 mi). *Perigee:* 138 km (85 mi).
- *Inclination:* 49.60 deg. *Period:* 93.90 min.
- **First attempted orbital Fractional Orbital Bombardment System test.**
- Not listed in TRW Space Log
- The second stage of the booster placed the third stage and dummy warhead into a 214 km x 523 km parking orbit. altitude. The third stage was evidently wrongly oriented, and instead of braking the warhead into an impact at Kapustin Yar, boosted it into a higher 280 km x 1,010 km orbit. The dummy warhead separated but was commanded to self destruct, resulting in over 100 catalogued orbiting objects.

Second orbital mission – also fails

- **1966 November 2** - . 00:50 GMT - *Decay Date*: 1976-04-26 .
- *USAF Sat Cat*: 2931 . *COSPAR*: 1966-101AS.
- *Apogee*: 767 km (476 mi). *Perigee*: 504 km (313 mi).
- TRW Space Log says 140 x 855 km 94.6 min decayed 11/17/1966
- *Inclination*: 49.10 deg. *Period*: 97.43 min.
- Second attempted orbital Fractional Orbital Bombardment System test.
- Failure - self destruct charge was detonated, resulting in 50 catalogued orbiting objects. No impact of the dummy warhead in the Kapustin Yar impact zone..

First apparently success – “Kosmos-139” Космос-139

- **1967 January 25** - . 13:55 GMT - *Decay Date*: 1967-01-25 .
- *USAF Sat Cat*: 2656 . *COSPAR*: 1967-005A.
- *Apogee*: 210 km (130 mi). *Perigee*: 144 km (89 mi).
- *Inclination*: 49.70 deg. *Period*: 88.00 min.
- Third orbital Fractional Orbital Bombardment System test. First apparently successful test. The warhead was braked to an impact in the Kapustin Yar range..

ILLUMINATION CONDITIONS WERE PROPER FOR GROUND OBSERVATIONS OF BACKLIT DEORBIT BURN PLUME, BUT NO RECORDS CAN BE FOUND OF ANY WITNESS REPORTS



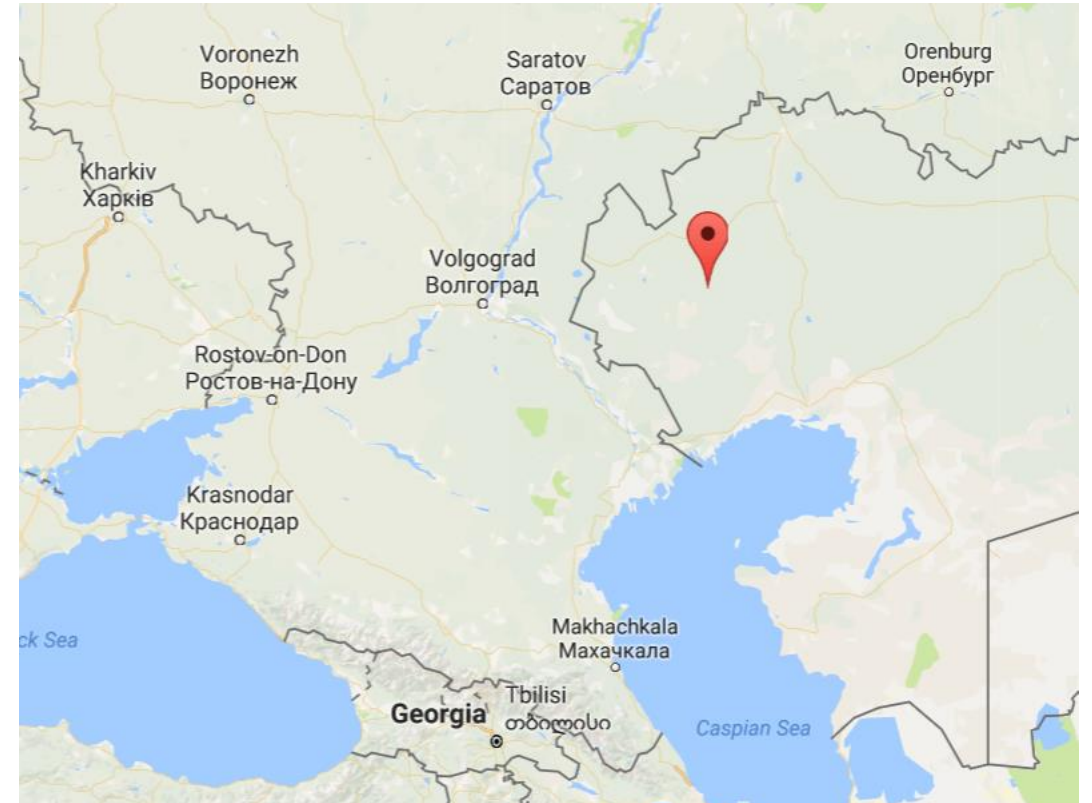
1967 March 22 / 14:05 GMT – launch failure

Очередной пуск, 22 марта 1967 г. [14:05 GMT] был аварийным — вторая ступень ракеты взорвалась на 255-й секунде полета. Причиной аварии явился прогар газогенератора наддува бака окислителя 2-й ступени.

- «Космосы» для штурма Америки
- Окончание. Начало в НК №7, 2000
О.Урусов специально для “Новостей космонавтики”
- **Next-in-line launch had an accident — the second stage of the rocket exploded at the 255th second of flight. The cause of the accident was a burnout of the gas generator for oxidizer tank pressurization in the second stage. – Orusov, NK**

The target point: Novaya Kazanka

- ОГЧ успешно достигла района “Новая Казанка”.
- Far northwest Kazakhstan
- On the Kapustin Yar test range
- Major radar/optical tracking facilities



Kosmos-160, first ground witnesses

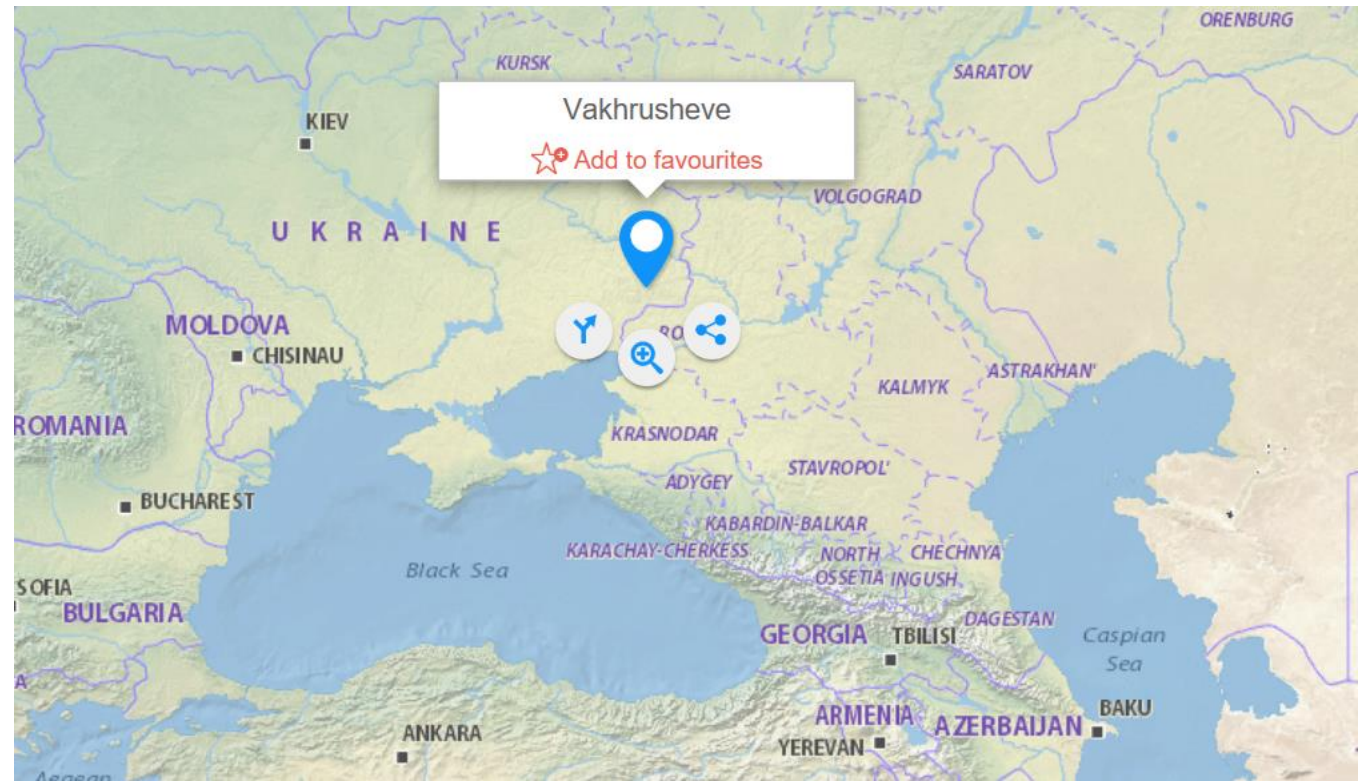
- **1967 May 17** - . 16:05 GMT -. *Decay Date:* 1967-05-18 .
- *USAF Sat Cat:* 2806 . *COSPAR:* 1967-047A.
- *Apogee:* 177 km (109 mi). *Perigee:* 137 km (85 mi).
- *Inclination:* 49.70 deg. *Period:* 87.60 min.
- Fractional Orbital Bombardment system test..



Witness observation

- May 17, 1967. 22:05 Bakhrushev --
By a warm, quiet evening several witnesses including S.V. Ostrovskiy saw a bright point descending in the western sky. It flew down to an altitude estimated as about one mile, when it changed to a horizontal course. At that point it appeared as a dark body of impressive proportions, with a compact, well-defined light at the rear. It flew off silently at less than 200 mph, with a dark orange tail behind it. Zigel crescent-13,

Островский Вахрушево



1967 May 17 – Warhead failure
[that's the way I read the NK article]

**Due to a malfunction in the control system
of the warhead it was disabled.**

Следующий пуск, 17 мая 1967 г. вновь был аварийным.

Из-за сбоя в системе управления головной частью она была подорвана.

«Космосы» для штурма Америки

- Окончание. Начало в НК №7, 2000

О.Урусов специально для “Новостей космонавтики”

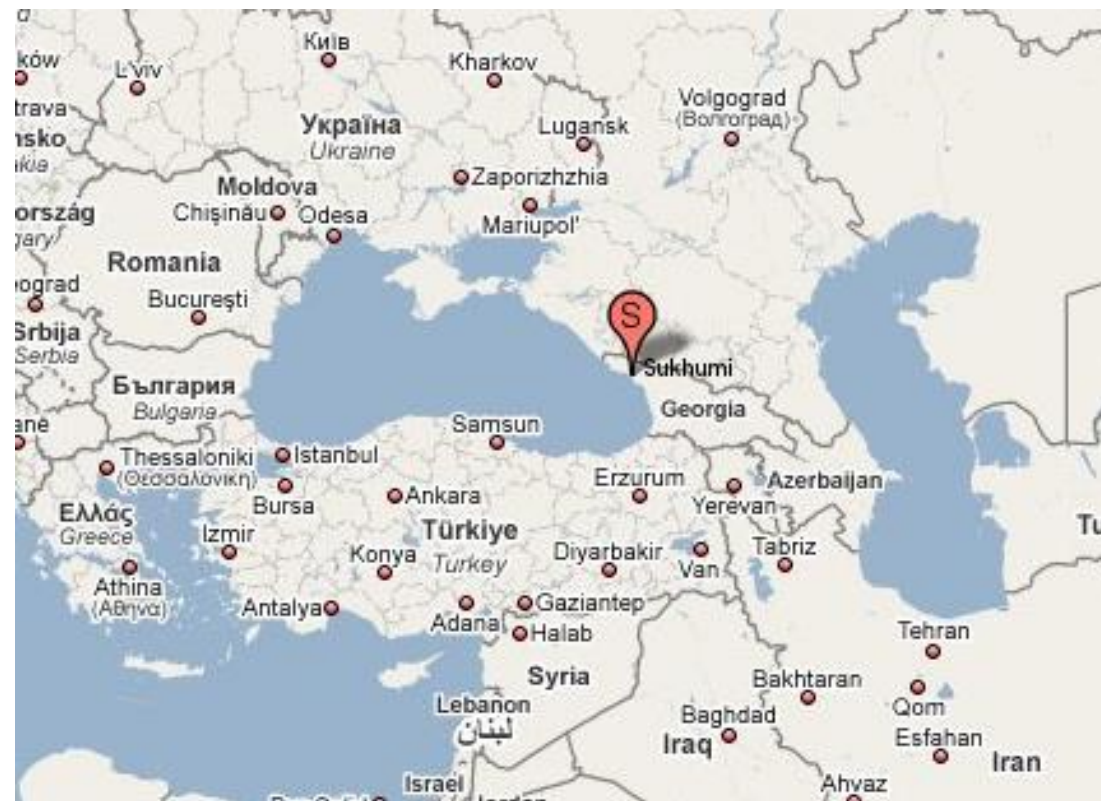
[get fuller article citation]]

1967 July 17 – Kosmos-169.

- 16:45 GMT - *Decay Date*: 1967-07-17 .
- *USAF Sat Cat*: 2878 . *COSPAR*: 1967-069A.
- *Apogee*: 200 km (120 mi). *Perigee*: 135 km (83 mi).
- *Inclination*: 49.70 deg. *Period*: 87.80 min.
- Fractional Orbital Bombardment system test..

Witness report

July 17, 1967. 23:00 Sukhumi (Agudzeri) -
- L.V. Antonova, an editor with the
publishing house "Thought", and T.I.
Dantseva, fellow of the Kurchatov
scientific institute, observed a strange
object along with four other people. The
weather was clear at the time. The object
looked like a flat disk with shining edge,
flying at an altitude of some 350 feet at
the speed of a propeller aircraft.



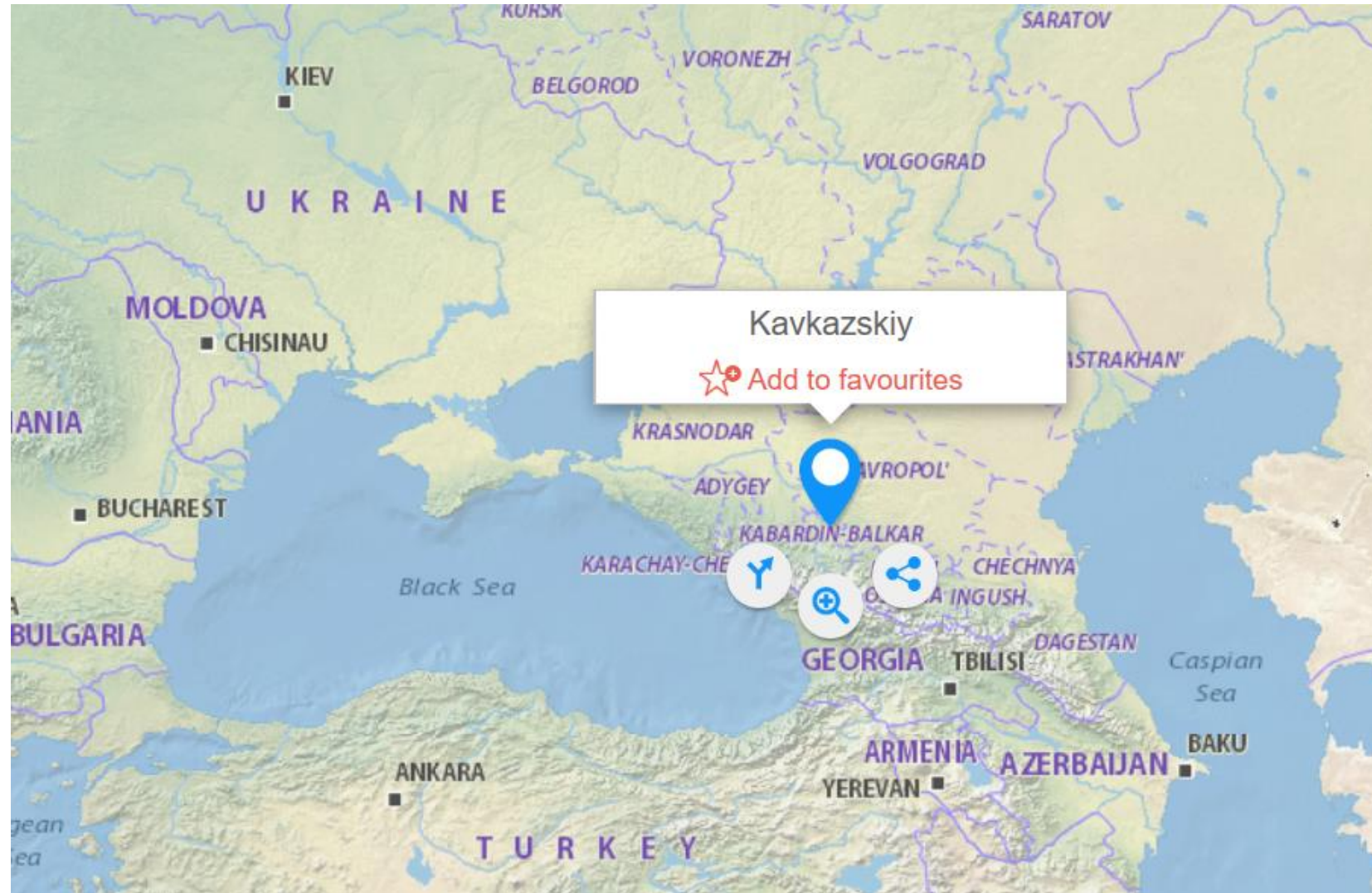
1967 July 31 - Kosmos-170

- 16:45 GMT - *Decay Date*: 1967-07-31 .
- *USAF Sat Cat*: 2902 . *COSPAR*: 1967-074A.
- *Apogee*: 199 km (123 mi). *Perigee*: 141 km (87 mi). TRW: 121-252
- *Inclination*: 49.60 deg. *Period*: 87.90 min.
- Fractional Orbital Bombardment system test..



Witnesses

July 31, 1967. 21:15
Privilny farm, Kavkazkiy -
- I. Kosov, his wife and
farmer P.I. Marchenko
saw a dark red disk
flying from the
southwest to the
northeast. The witness
had time to count to
forty-two before the
object disappeared.



1967 August 8 - Kosmos-171

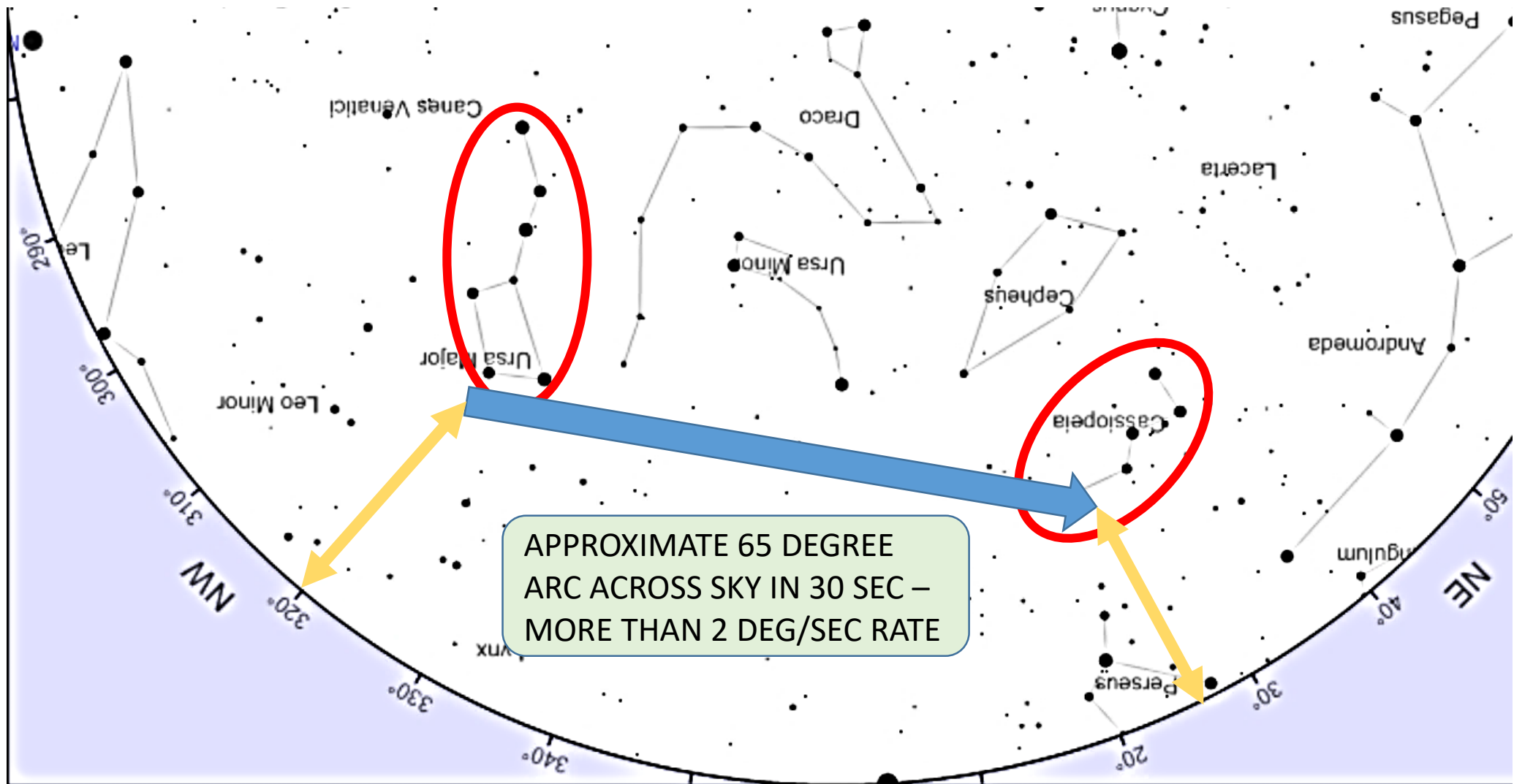
- 16:05 GMT - *Decay Date*: 1967-08-08 .
- *USAF Sat Cat*: 2911 . *COSPAR*: 1967-077A.
- *Apogee*: 177 km (109 mi). *Perigee*: 138 km (85 mi).
- *Inclination*: 49.60 deg. *Period*: 87.60 min.
- Fractional Orbital Bombardment system test..



Witnesses

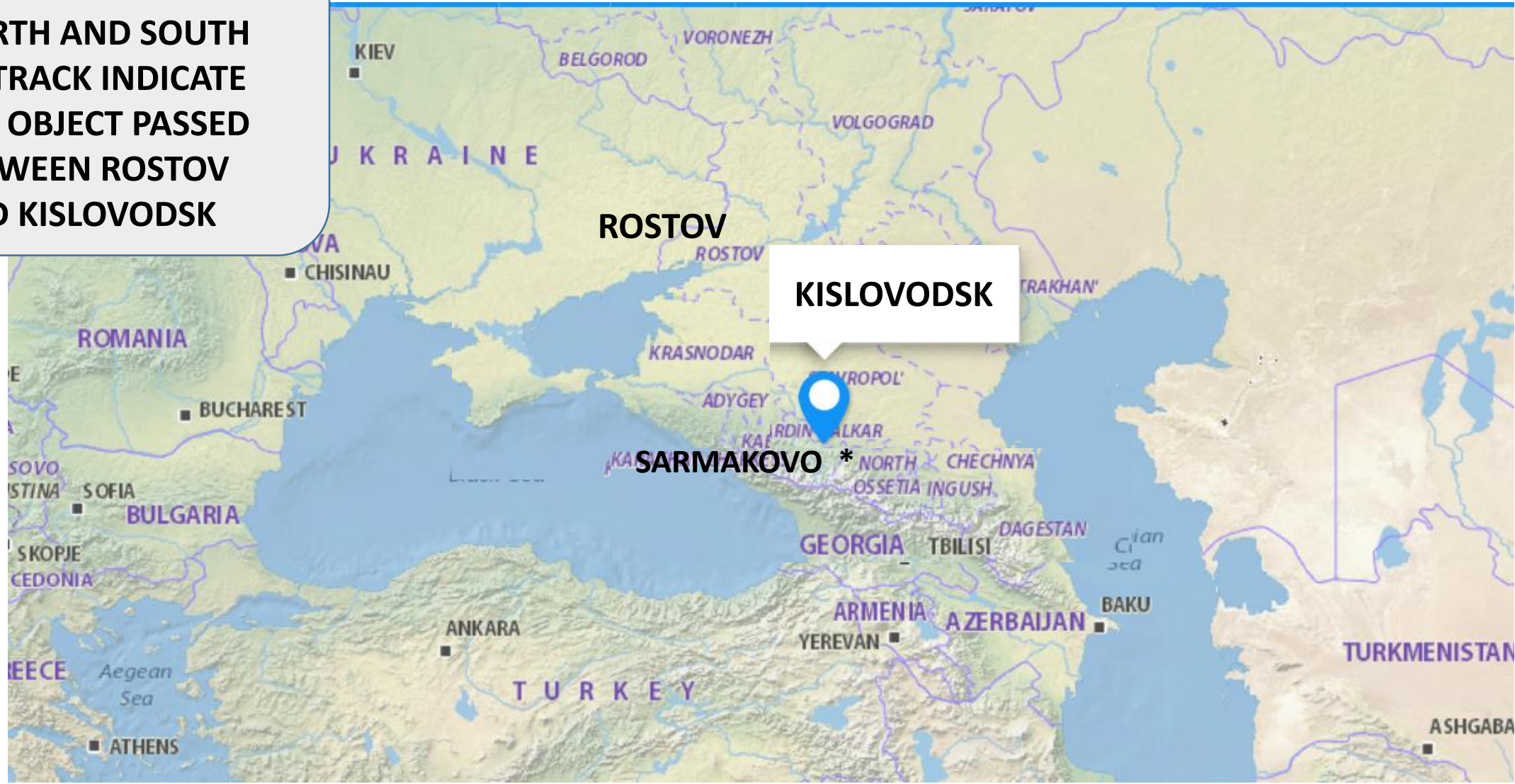
- August 8, 1967. 20:40 Kislovodsk -- An object shaped like a sharply outlined asymmetrical crescent flew over the mountain astronomical station of the Academy of Sciences. The object was slightly smaller than the moon, about twenty minutes of arc, with a color described as reddish by some observers, yellow for others. It flew from west to east about twenty degrees above the horizon, moving from the Big Dipper to Cassiopeia in about thirty seconds, at a uniform speed. The witnesses were A.A. Sazonov, a specialist in the ionosphere; V.A. Tsion of the Leningrad Polytechnical Institute, and seven members of a biological expedition.
- 8 August 1967, 9:45 p.m., Samakovo, Northern Caucasus. Four members of the Geographical Society of the Academy of Sciences saw a crescent, convex side forward, moving across the sky about 50 degrees above the horizon. The thickness of the crescent was about one fifth of a circle and the distance between the points was about 15 minutes of arc. At first only the crescent was seen. Then a luminescence filled the rest of the circle only to disappear a few moments later, replaced by "a formless flaming mass from which reddish tongues of flame licked out." In another three or four seconds the whole object rapidly shrank to a single dot of light "like on a TV set that has been turned off."
- [NOTE: The only location with a similar name in the Caucasus is Sarmakovo, a short distance east of Kislovodsk [and southeast of Pyatigorsk], 43° 44' 44" N, 43° 12' 1" E. <http://www.maplandia.com/russia/kabardino-balkarskaya-republic/zolskiy-rayon/sarmakovo/>]

“...from the Big Dipper to Cassiopeia...”
August 8, 1967. 17:40 GMT Kislovodsk



August 8, 1967

REPORTS FROM BOTH
NORTH AND SOUTH
OF TRACK INDICATE
THE OBJECT PASSED
BETWEEN ROSTOV
AND KISLOVODSK



Crescent-Shaped UFOs [NICAP 1980]

- *In this section of 88 sightings, many objects are described as being about the size of the moon. The tips of the crescent are sometimes equal in size, sometimes asymmetrical and sometimes point in the direction the object is traveling. The outer edge of the crescent is usually sharp while the inner edge is often fuzzy. In some cases bright discharges come out of the points of the crescent and in other cases star-like objects fly in apparent formation with the crescent. Here are some excerpts from the reports.*
- Early August 1967, 9:20 p.m., Rostov Oblast. An object moved across the southern sky from west to east. It was about the same size as and looked like a bright half moon. It was clearly outlined on all edges but was brighter on the leading, convex edge. A yellow light discharged from the tips. It appeared that the rear end of the object consisted of **a tapered, streamlined black body**. A white light with the brightness of a first magnitude star was two star diameters above and one half star diameter ahead of the object. The "moon" and the "star" moved together so evenly that **"they seemed to be connected by a rigid coupling."**
- The objects were about 30-40 degrees above the horizon. During the minute and a half they were in view, they covered about one third of the arc of the sky. They made no noise. Five other persons witnessed this sighting. The author of this sighting wrote down his version and then separately questioned the other five. One of them was the author's brother, who was 15 kilometers north, on the steppe. All of the others agreed on the details, except the brother who saw **two bright "stars" near the object.**

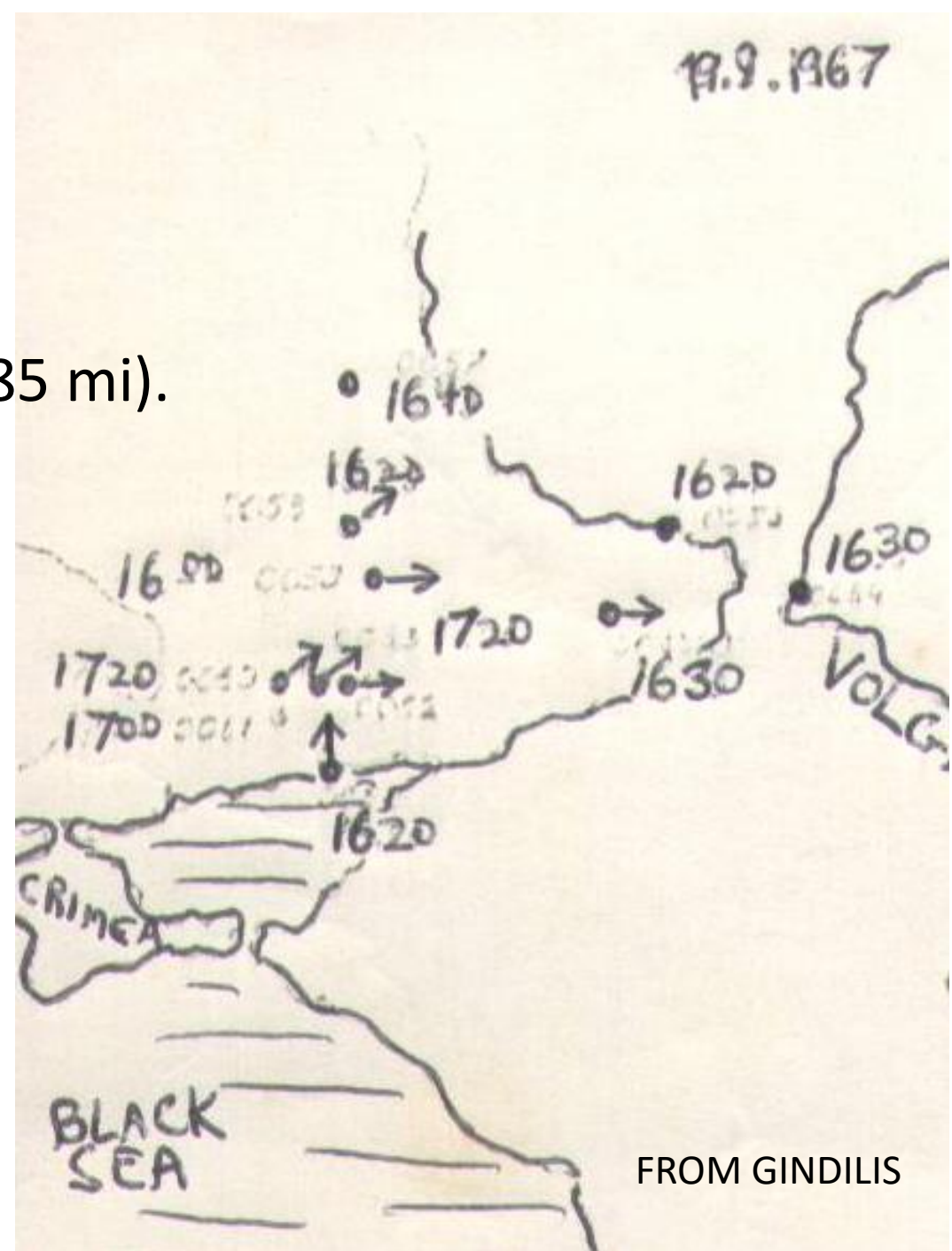
1967 September 19, Kosmos-178

- 14:45 GMT - *Decay Date*: 1967-09-19
- *USAF Sat Cat*: 2951 . *COSPAR*: 1967-089A.
- *Apogee*: 258 km (160 mi). *Perigee*: 138 km (85 mi).
- *Inclination*: 49.70 deg. *Period*: 88.40 min.

REPORTS:

Svatovsk (7:20 p.m.) Zimnik (7:20 p.m.),
Volzhskiy (7:30 p.m.), Novooskolsk 7:40 p.m.),
Severodonetsk (about 7 p.m.), Donetsk (8:20
p.m.), Zhdanov (8:20 p.m.), Mariinskiy (about
8 p.m.), and Roy (8 p.m.).

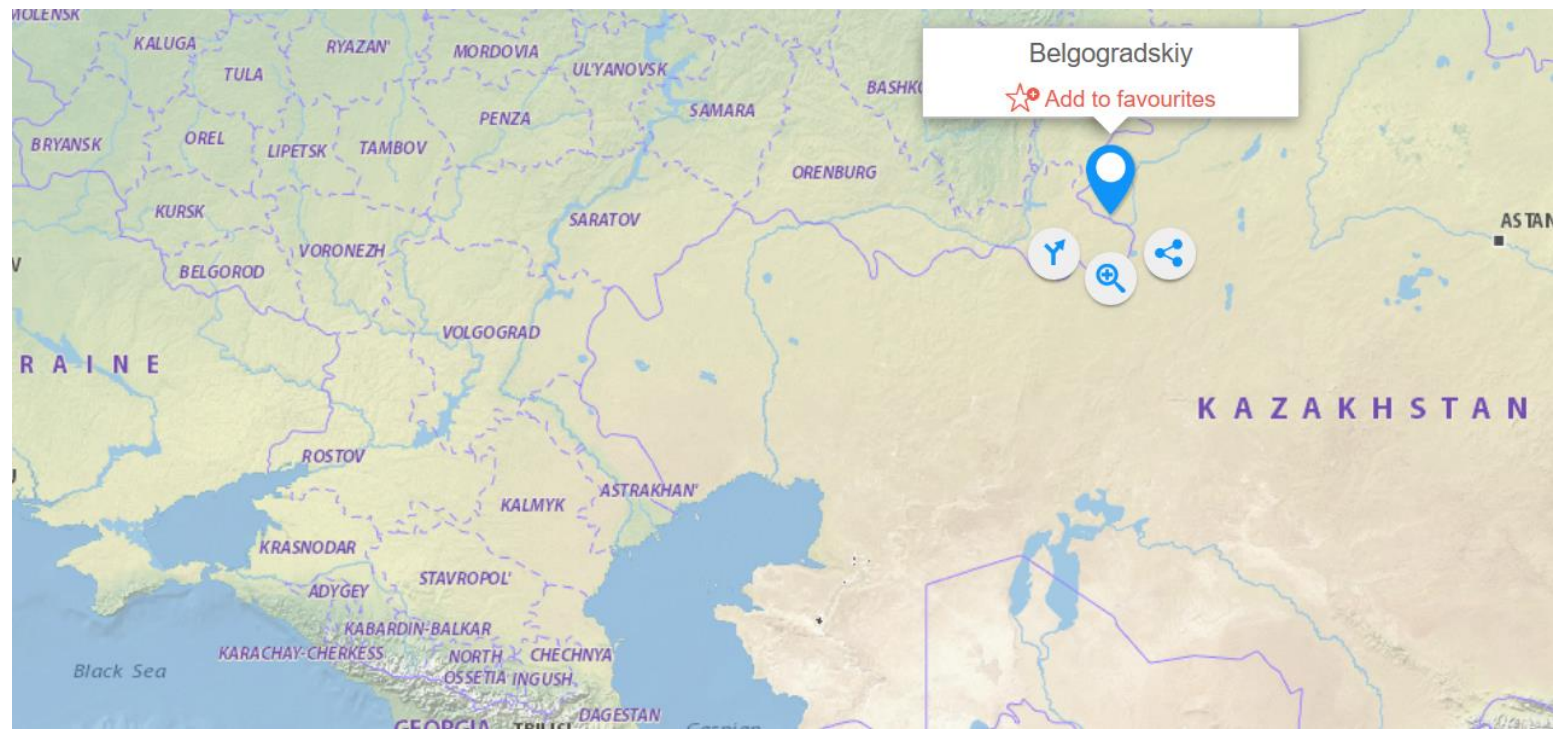
FOBS overflight = approx. 7:25 PM [GMT + 3]



observations

- September 19, 1967. 19:40 Belgogradskaya–
- A witness named A. Serdyukov, who was traveling with a group of communications technicians, observed a luminous half-moon rising high in the sky directly in front of them. It descended rapidly, leaving a cone-shaped tail. The men stopped their vehicles to watch it.
- After about forty seconds the half moon appeared to swing in the sky, becoming smaller in size, as its color turned to red. It assumed a drop-like shape and stopped, hanging in the sky for a minute, after which it seemed to dissolve.

IF THE LOCATION IS CORRECTLY IDENTIFIED, THE OBSERVATION IS CONSISTENT WITH A HEAD-ON VIEW TO THE WEST OF THE OBJECT RISING ABOVE HORIZON & THEN FALLING TO GROUND.



Canonical narrative: 'Flight 404' crew saw a 'flying crescent' that nearly killed them

“On September 19, 1967, an air crew on the Voroshilovgrad-to-Volgograd route reported that the UFO had hovered and then maneuvered around their plane. Their plane's engines mysteriously died, and could not be started up again until after the UFO had disappeared, when the aircraft was only half a mile high.”

[Voroshilovgrad is now 'Lugansk']

Authoritative 'Weinstein List' of pilot cases describes IL-14 airliner between Zaporozhe and Volgograd on September 29, with a pilot reporting a UFO flying above the plane, engines stopped, started again when it disappeared [source Les ovnis en URSS et dans les pays de l'est, I. Hobana et J. Weverbergh (Laffont 1972)]

<http://www.ufoevidence.org/newsite/files/WeinsteinPilotCatalog.pdf>

Original source is Zigel, quoting a passenger on the flight from Zaporozhe to Volgograd with intermediate stop in Lugansk, his report [p. 49] says Sep 19. The report also mentions a discussion with aircrew but NO description of engine trouble. There are no further details of the flight in Zigel's report nor does he mention engine failure in his public statements from 1968 [I may have missed it]. Ten years later, Gindilis DID mention engine effects.



REPORT OF PASSENGER ON FLIGHT 404 WHO SAW CRESCENT PASS HIM ON THE RIGHT SIDE

Сообщение 50

В сентябре 1967 года я летел самолетом в город Запорожье, в отпуск, к своей дочери.

19 сентября я возвращался обратно. Из города Запорожье я вылетел в 17-00 Московского времени (самолет ИЛ-14, рейс 404), по направлению на Волгоград. Место мое в самолете было крайнее, у окна. Посадку наш самолет сделал в Луганске, от Луганского аэропорта мы вылетели на Волгоград.

Летели на высоте 1800 метров, за бортом было темно. Я все время смотрел в окно и вдруг заметил, что какой-то предмет в виде серпа Луны, стоит в воздухе очень высоко, примерно от нас километров в 20-ти. Сначала я подумал, что это Луна, но потом впереди увидел настоящую Луну. А эта вторая "Луна" в виде серпа стала приближаться к нам, потом снизилась до нашего уровня. Когда этот странный предмет снизился, очертания полумесяца исчезли и предмет стал каким-то фиолетовым, продолговатым.

Сзади него сыпался огонь в виде красных звездочек, и он некоторое время летел с такой же скоростью, как и мы (300 км в час). Затем скорость предмета увеличилась; появилось сильное пламя, и предмет стремительно улетел по направлению к Волгограду. Мы продолжали лететь к Волгоградскому аэропорту, куда благополучно прибыли в 20-00 час.

Я это загадочное явление показывал соседу, который тоже был в недоумении.

Летчики говорили, что эту штуку мы видели впервые, сами не зная как все это объяснить.

In September 1967, I flew by plane to the city of Zaporozhia, on vacation, to my daughter. On 19 September I returned. From the city of Zaporozhia, I flew at 17-00 Moscow time (Il-14 aircraft, Flight 404) to Volgograd. My seat in the plane was at the window. The airplane landed in Lugansk and from Lugansk airport we flew to Volgograd.

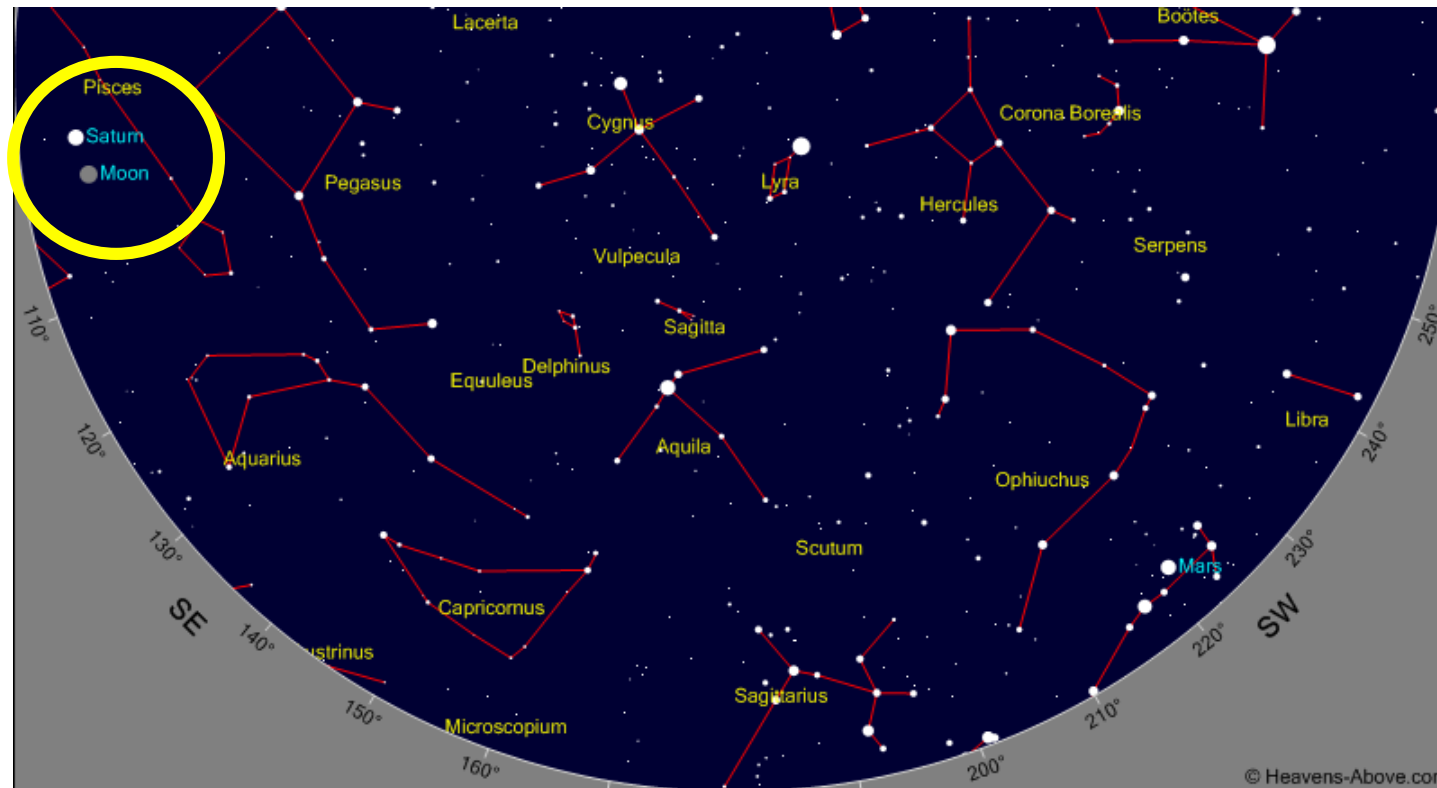
We flew at an altitude of 1800 meters, it was dark outside. All the time I looked out the window and suddenly noticed that some object in the form of a sickle moon was standing very high in the air, about 20 kilometers from us. At first I thought it was the moon, but then saw the real moon ahead of us. And this second "Moon" looking like a sickle got closer to us, then went down to our level. When this strange object had fallen, the outlines of the half-moon disappeared and the subject became a somewhat violetish oblong.

Behind it fell a fire in the form of red stars, and it for some time flew with the same speed as ours (300 km/h). Then the subject increased speed, a strong flame appeared, and the subject rapidly flew off in the direction of Volgograd. We continued to fly to Volgograd airport, where we safely arrived at 20-00 h.

I pointed out this mysterious phenomenon to the man next to me, who was also at a loss.

The pilots said that this thing we saw for the first time, themselves not knowing how to explain it all

THE PASSENGER'S REPORT CONTAINED NUMEROUS VITAL CLUES TO WHAT HE WAS SEEING. ON THE FLIGHT TO VOLGOGRAD, THE RISING MOON IN THE EAST WAS JUST OFF TO THE RIGHT FROM DEAD AHEAD, EXACTLY AS HE STATED. HE DESCRIBED THE HALF-MOON OUTLINE DISAPPEARING [ENGINE CUTOFF] AND THEN A FIERY TRAIL [REENTRY] IN THE EASTERLY DIRECTION [THE TEST RANGE AT KAPUSTIN YAR].



<http://www.heavens-above.com/SkyChart.aspx?lat=48.708&lng=44.5133&loc=Volgograd&alt=36&tz=RFTm3>

1967 September 22, Kosmos-179

- 14:05 GMT - *Decay Date*: 1967-09-22 .
 - *USAF Sat Cat*: 2962 . *COSPAR*: 1967-091A.
 - *Apogee*: 207 km (128 mi). *Perigee*: 139 km (86 mi).
 - *Inclination*: 49.60 deg. *Period*: 87.90 min.
 - Fractional Orbital Bombardment system test..
-
- SEVERAL FOBS-LIKE REPORTS from 'SECOND HALF OF SEPTEMBER'
BUT NONE ON SPECIFIC DATE

1967 October 18, Kosmos-183

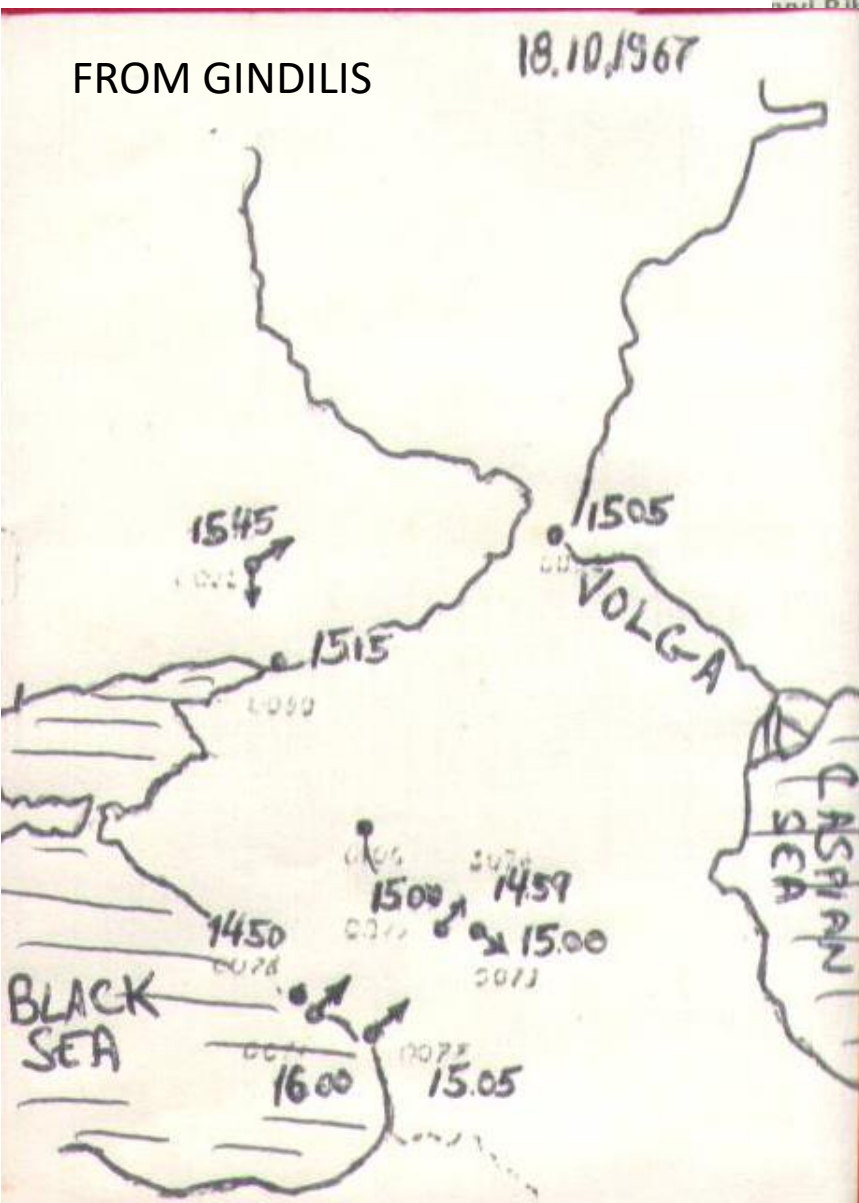
- 13:30 GMT - *Decay Date*: 1967-10-18 .
- *USAF Sat Cat*: 3001 . *COSPAR*: 1967-099A.
- *Apogee*: 306 km (190 mi). *Perigee*: 140 km (80 mi). TRW 130-315
- *Inclination*: 49.60 deg. *Period*: 89.00 min.
- Fractional Orbital Bombardment system test..



Witnesses

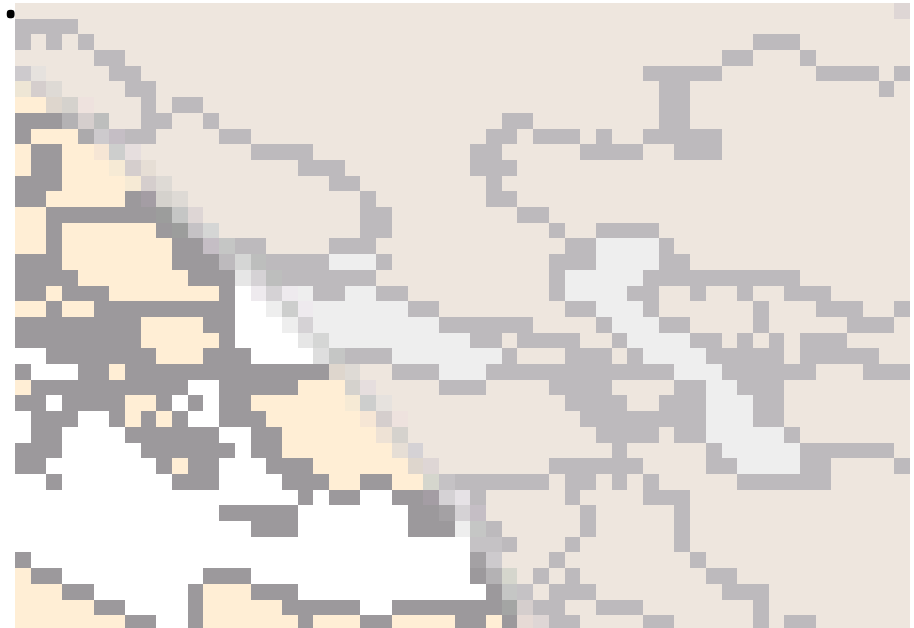
- October 18, 1967. 21:00 Dzhubga -- A Moscow physician who was visiting this town saw a bright object with the shape of a sphere moving evenly from the sea toward the east. The crowd attending an open-air movie projection witnessed the occurrence as well.
-
- October 18, 1967. 18:00 Pyatigorsk -- Astronomer Z. Kadikov, from Kazan Engelgardt observatory, saw a bright object in the northwest. It was a crescent with sharp edges and pointed horns, yellow in color with a pale bluish tail, moving at about 1.5 degrees per second. It became smaller as it flew and was eventually reduced to a point. Finding other witnesses, Kadikov was able to triangulate the phenomenon. He estimated it may have been about fifty miles above the earth and some 1,800 feet between the "horns," flying at about three miles per second.
- Zufar Kadikov [Зуфар Кадиков], an astronomer of Kazan Station-Observatory, when observing recurrent flights of crescent-shaped UFOs, determined some linear parameters of the latter: speed (5 km/sec), altitude (100-120 km) and the size of the crescent (some 600 m). These figures and the shape of the object do rule out such explanations as "an artificial satellite, a booster rocket, a weather balloon". [Zigel F.Y. *UFO Observations in the USSR*. Vol. 1, p. 51, 63.]

October 18, 1967, witness locations and view directions



1967 October 28, Kosmos-187

- 13:15 GMT - *Decay Date*: 1967-10-28 .
- *USAF Sat Cat*: 3016 . *COSPAR*: 1967-106A.
- *Apogee*: 301 km (187 mi). *Perigee*: 143 km (88 mi).
- *Inclination*: 49.60 deg. *Period*: 88.90 min.
- Fractional Orbital Bombardment System test..



Oct 28 reports in Rostov [from Zigel]

Сообщение 71

28 октября 1967 года приблизительно между 18 и 18.30 часами я видел летящий по небу какой-то странный предмет. Он имел форму полумесяца оранжево-красного цвета. Двигался он с юга на север, а рядом с ним летели две голубоватые точки. Это движение продолжалось 2-3 минуты, а затем предмет скрылся за линией горизонта. Все это происходило в районе города Новошахтинска Ростовской области.

Крутенко Н., г. Новошахтинск Ростовской области, ул. Баумана, д. 39.

Сообщение 72

28 октября 1967 года между 17.30 и 18 час. вечера в направлении с юго-запада к северо-востоку пролетел светящийся серп.

Опишу как мы его видели, причем жена видела уже второй раз. Первый раз она видела где-то в августе или сентябре м-це с. г. Двигался этот предмет не очень быстро. Он был красного цвета и у него как-будто сзади было как зарево, что-то горело. Впереди я заметил две горящие точки в виде огоньков самолета в ночное время, почему я и подумал, что это самолет что-то тянет, может быть, какую мишень.

Козлов Н.В., г. Шахты, Ростовской обл. ул. Садовая, д. 22-б, кв. 61.

NK article

Ракета, стартовавшая 28 октября 1967 г., вывела головную часть на орбиту под именем “Космос–187”. ОГЧ достигла района цели со значительным перелетом. Это стало следствием сбоя в работе радиовысотомера, выдавшего ложную информацию о высоте орбиты. Кроме того, двигатель ОГЧ вышел на режим с заниженным значением параметров и работал до полного выгорания топлива.

Следующая ракета была запущена 28 октября 1967 г. ОГЧ (“Космос–187”) незначительно перелетела цель из-за сбоев в работе двигателя. Анализ показал, что причиной ненормальной работы двигателя стала конструкторская ошибка.

The rocket, launched October 28, 1967, brought the craft into orbit under the name “Kosmos-187. The warhead reached the target area with significant overshoot. This was a consequence of the outage of the radar altimeter, issuing false information about the height of the orbit. In addition, the warhead engine came on mode with low value parameters and worked until the complete burnout of fuel. Analysis showed that the cause of the abnormal operation of the engine was a design error.

Test program revealed need or major improvements

По программе ЛКИ планировалось произвести запуски 16 ракет. Однако по завершению первоначально планировавшихся испытаний ни у военных, ни у промышленности не было полной уверенности в том, что орбитальные головные части, в случае их применения, смогут приземляться в заданном районе.

Решено было произвести доработки двигательных установок орбитальных головных частей. Конструкторское бюро выполнило большой объем баллистических расчетов, методических поправок, испытаний и экспериментальных проверок, на основе которых конструкция двигательной установки орбитальной головной части была существенно улучшена. Для подтверждения правильности доработки основных параметров ДУ были дополнительно выделены три ракеты, стартовавшие весной 1968 г. Запуски подтвердили соответствие характеристик при стендовых испытаниях расчетным и полученным при ЛКИ.

In the flight test program it was planned to conduct sixteen launches. However, upon completion of the originally planned testing neither the military nor the industry had complete confidence that the orbital warhead bus, if called upon, could land in a given area.

It was decided to refine the components of the orbital warhead busses. The design bureau performed a large volume of ballistic calculations, procedural modifications, testing and experimental inspections, on the basis of which the construction of the propulsion system of the orbital warhead bus was significantly improved. To confirm the correctness of refinement of the basic parameters of the engine they allocated an additional three missiles, starting in the spring of 1968. The launches confirmed the conformity of the performance with the bench tests and calculations.

Meanwhile, the 1967 test flights became world news

- As a direct result of mass media appeals that by complete accident were made during the growing public fascination with the south Russian “UFO visits”, hundreds of detailed personal eyewitness reports poured into addresses of UFO buffs in Moscow
- In December, a spectacular encounter by the crew of an airliner in the northern Urals made more headlines [the ‘Cape Kamenny UFO’]
- But it was only a chance distant encounter with a satellite launch vehicle seen at twilight, magnified by surprise, awe, and stories the witnesses had been reading
- That booster came out of the top secret [officially non-existent] Plesetsk complex, which had only begun satellite launchings the year before
- Legions of enthusiastic Russians were scanning the skies and reporting [and PUBLISHING] everything strange-looking they were seeing
- Somewhere in the Defense Ministry in Moscow, somebody with high-level clearances put two and two together....

UFO OBSERVATIONS IN THE USSR,
F. Yu. ZIGEL, volume I
based on manuscripts, Moscow, 1968

Ф. Ю. З и г е л ь

НАБЛЮДЕНИЯ НЛО В СССР

В ы п у с к 1

Н а п р а в а х р у к о п и с и

М о с к в а, 1968 г.

- НАБЛЮДЕНИЯ НЛО В СССР
- Foundation document of Russian amateur 'ufology'
- Drafts in circulation by early 1968
- No known English translation
- 220 pages, 44,000 words
- 200+ individual cases described
- no illustrations
- Carefully typed for ease in manual duplication
- Covers cases up to late 1967
- Exact dates are often unavailable but good shape and motion descriptions and time-of-day estimates allow the matching of many reports to exact FOBS overflights

СЕРПОВИДНЫЕ НЛО

Sickle-looking UFOs p. 4

Ф. Ю. Зигель
февраль 1968 года

Раздел I. СЕРПОВИДНЫЕ НЛО

General characteristics of the phenomenon:
Flight of orange or reddish sickles, in angular size comparable with the moon; from the horns of the sickle comes bright streamers, the form of the sickle sometimes is asymmetrical, the external edge is sharp, the inner is blurred; ahead of the sickle or on the sides are moving star-shaped objects that retain position relative to the sickle while flying at a constant distance.

Note: in this section, as in the future, messages are arranged in chronological order. Messages with the exact dating precede where month, day, or hour are approximate. At the end of each message is indicated observer's surname, his address, occupation. If multiple observers are given address only the main one.

Общие характеристики явления:

Полет оранжевого или красноватого серпика, по угловым размерам сравнимого с лунной; из рогов серпика исходят светлые истечения, форма серпа иногда асимметрична, внешняя кромка резкая, внутренняя размыта; впереди серпика или по бокам движутся звездообразные объекты, сохраняющие относительно серпика при полете постоянную дистанцию.

Примечание: В этом разделе, как и в дальнейшем, сообщения расположены в хронологическом порядке. Сообщения с точной датировкой предшествуют тем, где месяц, число или час указаны приблизительно. В конце каждого сообщения указывается фамилия наблюдателя, его адрес, род занятий. Если наблюдателей несколько, то дается адрес лишь главного из них.

SAMPLE REPORT

Сообщение 49

Я, Хмыров Сергей Борисович, проживающий в г. Донецке-54 ... возвращаясь домой 19 сентября 1967 года вечером, когда уже совсем стемнело и город был освещен электроосвещением, услышал сзади себя возгласы людей, удивленных тем, что летит какая-то огненная "запятая". Я повернулся назад и увидел в небе огненную "запятую", левая сторона которой была яркой, правая сторона туманной и расплывчатой.

Сначала мне показалось, что объект летит влево от меня, т.к. левая яркая сторона создавала впечатление "головы". Но потом оказалось, что объект летит на меня и немного левее. Потом объект поровнялся со мной. Я наблюдал его сбоку, снизу. Форма несколько изменилась и объект стал двигаться наиболее яркой частью огня вперед. Было хорошо видно, что пламя это движется от яркой части к тусклой и более широкой. В тусклой части было заметно вылетание искр по направлению течения пламени.

Видимость искр говорит о том, что объект был на небольшой высоте.

Объект пролетел мимо меня, и я наблюдал его сзади, сбоку, снизу. "Хвост" пламени сократился, над объектом появилась очень яркая белая звездочка. Объект удалялся, звездочка продолжала светать, но яркая часть пламени исчезла, осталось расплывчатое облачко.

Полет был совершенно беззвучен (в городских условиях тишины).

Направление полета с запада на восток, над северной частью г. Донецка в направлении г. Макеевки.

Скорость полета примерно равна скорости современного винтового самолета.

TRANSLATION NEEDS SMOOTHING

Message 49

I, Sergey Borisovich Khmyrov, residing in Donetsk-54 September 19, 1967 year, returning home in the evening, when already quite dark and the city was illuminated by streetlights. I heard behind me cries of people surprised that some fiery "comma" was flying over. I turned back and saw in the sky a fiery "comma", the left side which was bright, the right side was hazy and vague.

At first it seemed to me that the object is flying to the left of me, because it left a bright side created the impression of a "head". But then it turned out that the object flying at me and slightly to the left. Then the object came even with me. I watched it on the side, bottom. Form changed somewhat and was moving the most glaring part of the fire forward. You can easily see that the flame it moves from bright to Dim and wider. In the Dim part flying off of sparks on the direction of flow of the flame. Visibility sparks said that the object was at low altitude.

The object flew past me, and I watched him from behind, on the side, bottom. The "Tail" of flame shrank over the object appeared very bright white star. The object is removed, the asterisk has continued to grow light, but bright part of the flame disappeared, left vague little cloud.

The flight was completely noiseless (under urban conditions of quiet).

Flight direction from West to East over the northern part of Donetsk in the direction of Makeyevka. Flight speed is approximately equal to the speed of modern prop plane.

Orphan reports

- A number of reports from 1967 contain strikingly similar descriptions of the flying object, but not on dates of known FOBS missions.
- The easiest way to account for this is to assume that witnesses misremembered the dates of the events.
- But that is too facile a way to dismiss the calendric inconsistencies.
- For completeness and 'full disclosure', these 'orphan' reports need to be included on any thorough treatment of the phenomenon.
- The chances of unannounced FOBS missions in this period are remote
- **NOTE: Private Russian records were reproduced *samizdat*-fashion by retyping entire manuscripts with multiple carbons. Both typist errors and illegible copies could easily introduce numerical errors in multi-generation copies that reached the West.**

Other similar 1967 accounts (listed by Vallee)

- July 4, 1967, 21:15, Shakhty -- Docent Y. Krasuntsev and his son were resting near the Don River when they saw a **half-moon shaped object**. They first noticed two luminous points... They **moved to the southeast**, making no sound. A shower of orange sparks flew out of one object and turned into **a moon shape** that went on flying.
- July 8, 1967, 23:00, Volgograd -- Dr. Boris Dikhedeyev and a companion saw an orange object **in the form of a half moon**. It moved from **west to east**, leaving a trail that disappeared in the rear and appeared in front of the object. The sky was clear.
- September 4, 1967, 21:17, Yevpatoriya -- N. N. Pronin, senior editor with the *Mysl* publishing house in Moscow, saw a white, **crescent-shaped** object fly over... Along a straight line at an altitude of about 2,500 feet. The object moved with the **convex part facing forward**.
- September 9, 1967, 20:20, Donetsk -- A witness reported a **concave** flying object, the color of molten metal, **accompanied by a bright 'star'**. The phenomenon moved from **south to east**.

More 'orphan' Crescent-Shaped UFOs

- October and November 1967, 8-10:00 p.m., Rostov-on-Don. A retired army colonel saw **a burning crescent**, hollow side forward [JEO: sic!], flying across the sky. Because of the fire and luminescence the outline was not clear, the upper part being fuzzier. **A "star" flew ahead** and to the side. Residents of the colonel's apartment house saw this phenomenon **five times** between August and November 1967.
- 2 September 1967, 11:35 p.m., Pskovskaya Oblast. An electronic physicist and three camping friends noticed a luminous patch of fog in an otherwise cloudless night sky, about 20 degrees above the horizon. Suddenly the foggy area changed into a moon-sized yellow disc which rushed toward them at high speed. After five or six seconds the disc changed back into a patch of fog, beneath which a cone-shaped glow of light could be seen. In a few seconds there was a yellow flash in the fog patch and the disc reappeared, this time orange. In another five seconds the disc again changed back into fog, moved slowly to the east, climbed upward for about 12 minutes and disappeared.

After 1967, follow-on FOBS flights ALL occurred under different illumination conditions that eliminated chance of ground observation

- **1968 Apr 25**
- **1968 May 21**
- **1968 May 28**
- **1968 Oct 2**
- **1969 Sep 15**
- **1970 Sep 25**
- **1971 Aug 8**

}

SECOND FLIGHT TEST SERIES

}

ANNUAL TROOP TRAINING

}

AND VEHICLE RECERTIFICATION

1968 April 25

Kosmos-218

- 00:43 GMT - *Decay Date*: 1968-04-25 .
- *USAF Sat Cat*: 3217 . *COSPAR*: 1968-037A.
- *Apogee*: 162 km (100 mi). *Perigee*: 123 km (76 mi).
- *Inclination*: 49.6000 deg. *Period*: 87.30 min.
- Fractional Orbital Bombardment System test..
- Post-sunrise reentry, no reports



Two suborbital launches into Kamchatka

- **1968 May 21** - . *COSPAR*: 1968-U01xx.
- Probable suborbital test of Fractional Orbital Bombardment System..

- **1968 May 28** - . *COSPAR*: 1968-U02xx.
- Probable suborbital test of Fractional Orbital Bombardment System..

- These were apparently the last of the three special 'requalification' test flights already described.

1968 October 02

Kosmos-244

13:35 GMT - . *Decay Date:* 1968-10-02 .

USAF Sat Cat: 3449 . *COSPAR:* 1968-082A.

Apogee: 158 km (98 mi). *Perigee:* 140 km (80 mi).

Inclination: 49.60 deg. *Period:* 87.40 min.

8К69 впервые стартовала из шахтной пусковой установки 191 площадки. Еще одной особенностью этого пуска было то, что на двигательной установке ракеты не было телеметрических датчиков, использовавшихся в ходе летно–конструкторских испытаний. Стартовавшая ракета была партионной и ее пуск производился по программе отстрела боевых ракет от серийных партий. Таким же был и пуск орбитальной ракеты, выполненный год спустя — 15 сентября 1969 г

NK: “For the first time it launched from a silo in area 191. Another feature of this launch was that the sensors used in the flight-design tests were not installed on the missile engines. The rocket that was launched was partitioned and its launch was made for the program of shooting missiles from serial batches. The same was true for the next launch on Sep 15, 1969. “

1969 Sep 15 Kosmos-298

- 16:05 GMT - .
Decay 1969-09-15 .
- *USAF Sat Cat*: 4092 .
COSPAR: 1969-077A.
- *Apogee*: 162 km (100 mi).
Perigee: 127 km (78 mi).
- *Inclination*: 49.60 deg.
Period: 87.30 min.

1970 Sep 25 Kosmos-365

- 14:05 GMT - ..
Decay: 1970-09-25 .
- *USAF Sat Cat*: 4556 .
COSPAR: 1970-076A.
- *Apogee*: 173 km (107 mi).
Perigee: 145 km (90 mi).
- *Inclination*: 49.50 deg.
Period: 87.70 min.

1971 Aug 08 Kosmos-433

- 23:45 GMT - .
Decay: 1971-08-09 .
- *USAF Sat Cat*: 5402 .
COSPAR: 1971-068A.
- *Apogee*: 299 km (185 mi).
Perigee: 112 km (69 mi).
- *Inclination*: 49.40 deg.
Period: 88.50 min.

1972 launch planned but then cancelled

После принятия на вооружение 8К69 личным составом ракетной бригады было выполнено три пуска этой ракеты. Пуски 23 июля и 25 сентября 1970 г. были контрольными, а пуск 8 августа 1971 — учебно–боевым. Все они проводились по району “Новая Казанка” и были успешными. Еще один пуск планировалось провести в 1972 г., но в конце концов систему посчитали достаточно надежной и ракету решено было сэкономить.

NK: “After coming on line, the 8K69 missile brigade made three launches of this this missile. The launches on July 23 and September 25, 1970 were quality assurance, and August 8, 1971 for combat training. All of them were carried out onto the "Novay Kazanka" region and were successful. One more launch was scheduled for 1972, but eventually the system was considered sufficiently reliable and the rocket was economized. “

Meanwhile, back in Moscow.....

- In early 1968, after Kremlin deliberations that have never been documented, the USSR declared war on flying saucers
- The topic was denounced as unscientific and foreign-inspired
- All media accounts of public sightings were squelched
- Zigel and others were told to STFU.
- Westerners immediately suspected something was being covered up
- It had to be real aliens
- Nobody suspected REAL spacecraft

Academician Lev Gindilis revives the subject

- TEN YEARS LATER, Gindilis, Menkov and Petrovskaya of the Institute of Space Research of the *Academy of Sciences of the USSR* in 1978 published studies of USSR UFO reports.
- Except they didn't call them 'UFOs'.
- Because its subject was anomalous atmospheric phenomena, NASA paid for a translation.
- The 'Center or UFO Studies' published a pirated edition of the translation in 1980 in *Observations of Anomalous Atmospheric Phenomena in the USSR: Statistical Analysis*, CUFOS.
- <http://www.mediafire.com/?172ww3h0fu89sb8>
- "NASA Technical Memorandum No. 75665"
-

АКАДЕМИЯ НАУК СССР
ИНСТИТУТ КОСМИЧЕСКИХ ИССЛЕДОВАНИЙ

Пр . 473

Л.М.Гиндилис, Д.А.Меньков, И.Г.Петровская

НАБЛЮДЕНИЯ АНОМАЛЬНЫХ АТМОСФЕРНЫХ ЯВЛЕНИЙ В СССР.
СТАТИСТИЧЕСКИЙ АНАЛИЗ
Результаты обработки первой выборки наблюдательных
данных

Представлено к печати
членом-корреспондентом АН СССР
Н.С.Кардашевым

1979

OBSERVATIONS OF ANOMALOUS ATMOSPHERIC PHENOMENA IN THE USSR:
STATISTICAL ANALYSIS

RESULTS OF PROCESSING FIRST SAMPLE OF OBSERVATIONAL DATA

L.M. GINDILIS
D.A. MENKOV
I.G. PETROVSKAYA

CENTER FOR UFO STUDIES

Gindilis on “crescent-shaped objects”

“[B]y shape, angular dimensions and brightness they are similar to the moon in the phases preceding the first quarter; they usually move quite rapidly through the sky; in a number of cases, they have been observed simultaneously with the real moon; regular (“bicorn”) and “single horned” crescents, of a shape similar to that of an inverted comma, are distinguished; they frequently are accompanied by one or more star-like objects; generally, this is a quite rare type of object; however, **in the summer of 1967, they were observed quite frequently over the southern part of the European USSR.**”

“Various technical experiments in the atmosphere and space near the Earth?” – Nah, not many if any

14.3. NATURE OF OBJECTS AND FURTHER RESEARCH

A conclusion as to the nature of the observed phenomena can be drawn from available data. Some of them possibly can be due to atmospheric optics effects. However, in the overwhelming majority of cases, they evidently are of a completely different nature. The large percentage of independent observations made simultaneously at different points hundreds of kilometers apart indicates this, in particular.

A certain portion of the observations may be due to various technical experiments in the atmosphere and space near the earth, to observations of space technology objects, in particular. However, the kinematic characteristics exclude the possibility of such an explanation for at least one third of the cases. It also is difficult to match data on the shapes of the objects and other characteristics noted above with such an explanation. Finally, observations made long before 1957, i.e., before the start of the space age, must be considered.

Obviously, the question of the nature of the anomalous phenomena still should be considered open.

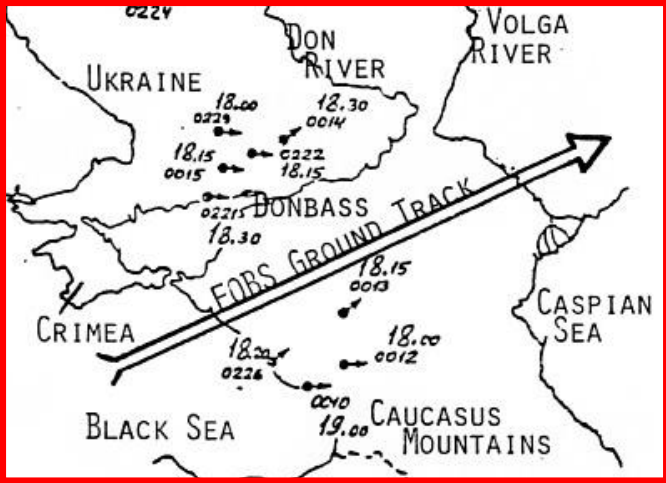
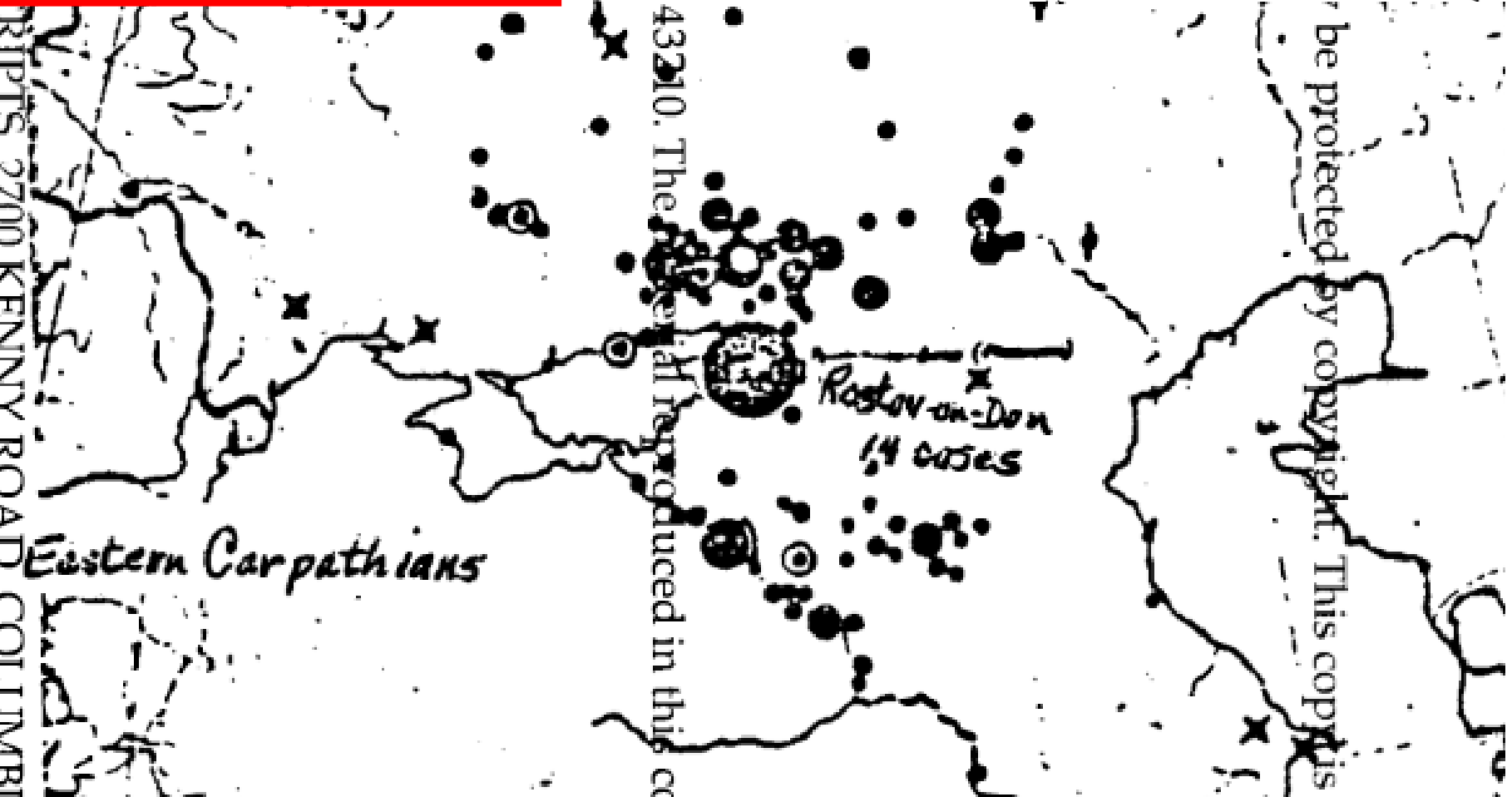


FIGURE 1. OBSERVATION POINTS, EUROPEAN USSR

before 1957
 1957-1966
 1967
 1968-1974

- 1 observation
- 2 observations
- 3 observations
- 4 observations

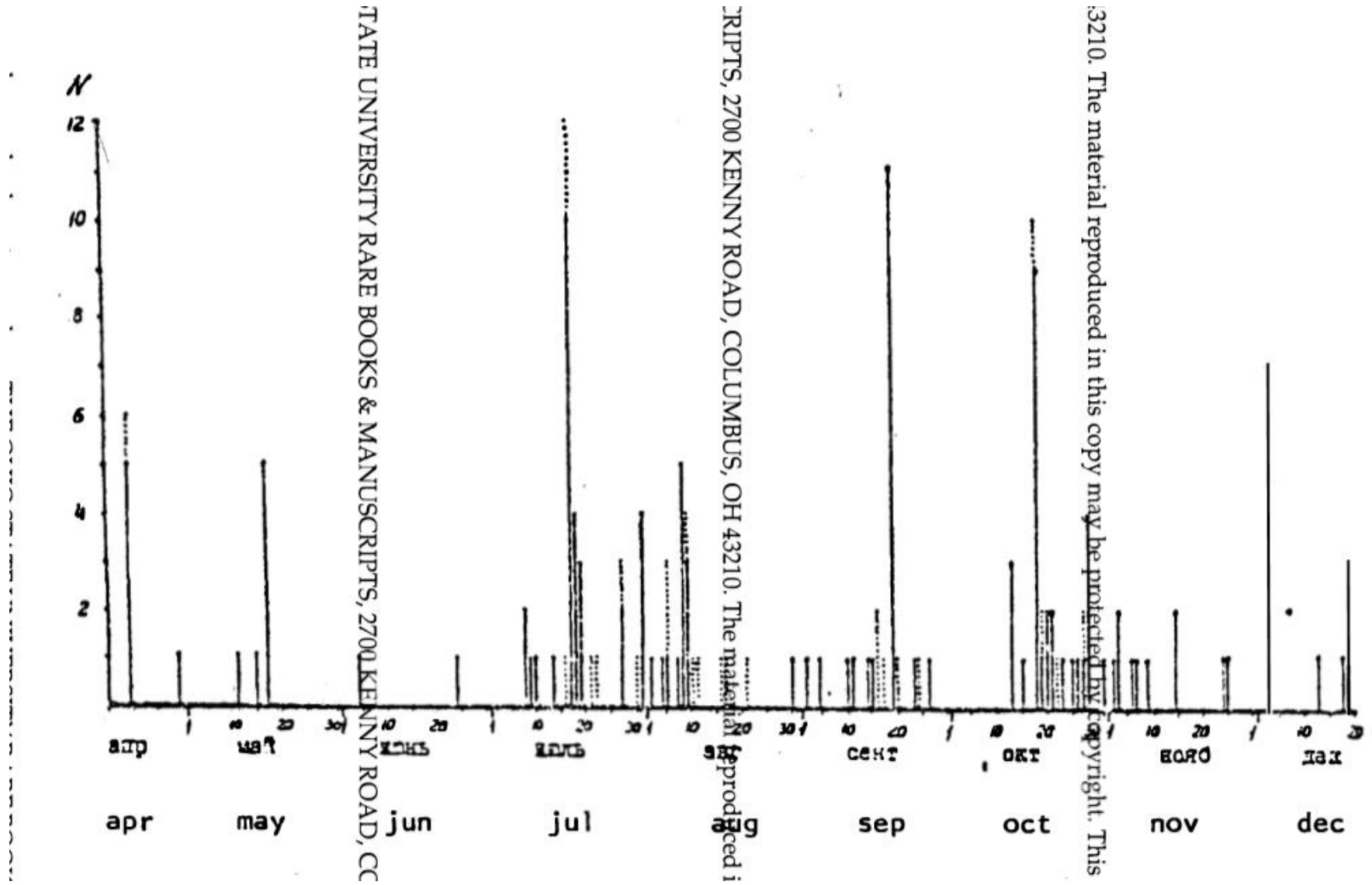


Gindilis report:
 Geographical
 distribution of
 reports show
 concentration
 along track of
 FOBS flights but
 no mention of it.

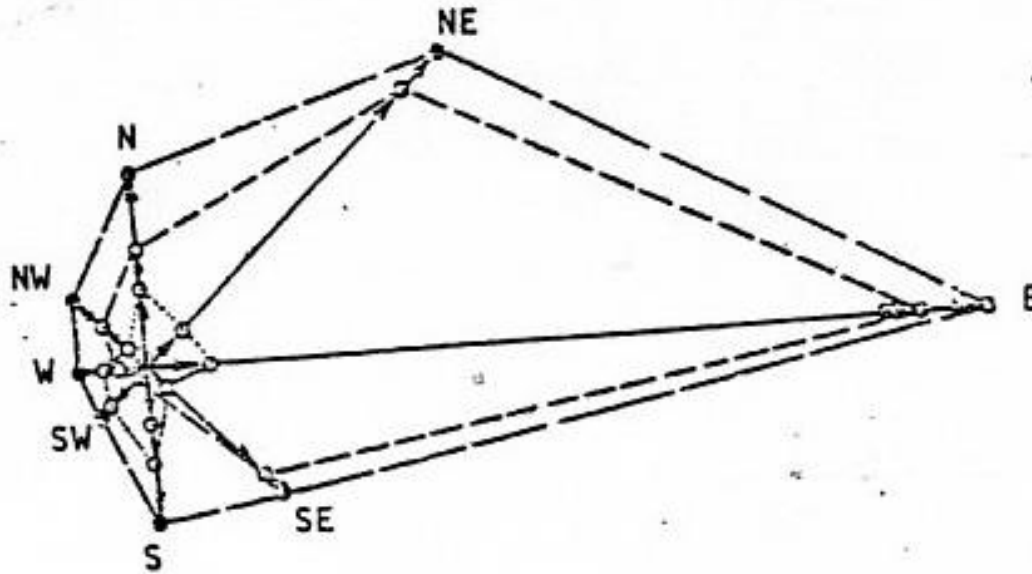
The material reproduced in this copy is protected by copyright. This copy is

use only; do not reproduce. (H)

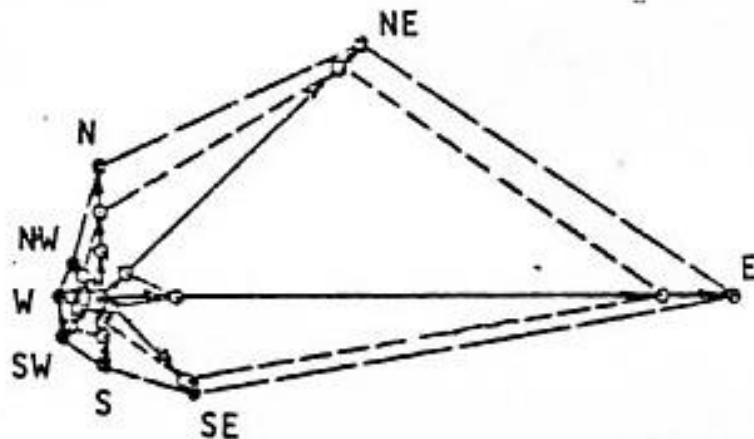
GINDILIS FIGURE 9: DISTRIBUTION OF NUMBER OF CASES PER DAY OF 1967



a



b



Gindilis discovered very asymmetrical distribution of UFO “departure vectors”

FIGURE 18. DISTRIBUTION BY DIRECTION OF MOTION

A. Number of cases, allowing only for cases of departure of objects in one direction

B. Number of objects, allowing for all departing objects

The 'crescents' did puzzle co-author D. A. Menkov

- Menkov wrote that "In 1967, there was increased activity" in the Northern Caucasus, Donbass, and the Rostov region" – [JEO: and we now know those areas are right along the ground track of returning FOBS warheads.]
- "The 1967 distribution is clearly asymmetrical," he continued. "Movement in an easterly direction is prevalent."
- Additionally, "A considerable fraction of the usually extremely rare crescent-like objects should be noted; this is associated with the peculiarities of 1967, which makes the main contribution to the sample under consideration," noted Menkov.
- "Crescent-shaped objects ..usually move quite rapidly through the sky," Menkov continued. "They frequently are accompanied by one or more starlike objects (JEO: burning fragments of the retro-rocket package)."
- "In the summer of 1967, they were observed quite frequently over the southern parts of European USSR....(and) these objects represent an appreciable fraction of the study sample."

MEPI engineer-physicist *D. Menkov*

- Menkov also tried to explain why there were so many cases in the data base from 1967 alone.
- "The sharp increase in number evidently is associated with a Central Television appearance, in which the UFO phenomenon was discussed and reporting observations of similar phenomena was suggested.
- "Similarly, a sharp drop in the number of reports after 1968 evidently is associated with critical statements in the central press (Pravda, 29 February 1968), in which the UFO problem was classified as unscientific."

Vol. 11, No. 6, June 1980

WESTERN UFOLOGISTS WERE ENTHUSIASTIC

UFO INVESTIGATOR



NICAP 5012 Del Ray Avenue, Washington, D.C. 20014 A non-profit corporation since 1956

* * * * *

National Investigations Committee on Aerial Phenomena

UFOS IN THE USSR

The USSR is synonymous with secrecy. There are thousands of aspects of life which, in the West, are regularly discussed by TV and the press but which are tightly held in the USSR. When did you last see a public opinion poll on the views of the Soviet man-in-the-street? The subject of UFOs in the USSR is one about which we know very little. Now, we have obtained a copy of a Soviet report which sheds a bit more light on the subject. The report tells the story of widespread interest in the matter by scholars and by the public. It describes some 190 sightings of UFOs, all within the USSR. It tells how attempts to form organizations in the USSR to study UFOs were twice squelched by the Government with statements that the problem of UFOs does not exist. And it considers some explanations of what UFOs may be.

Gindilis Report impressed Western ufologists

- Dr. J. Allen Hynek: Another recent example of scientific interest comes from the USSR Academy of Science. Preferring the term "anomalous atmospheric phenomena," Gindilis, Men'kov, and Petrovskaya report that "the substantial percentage of observers who have **adequate qualifications** attracts attention: scientific workers, engineers, pilots (52 percent). Contrary to the widespread fallacy, there is a highly significant percentage of astronomers among the observers (7.5 percent)."
- The document is a "a study of 256 UFO reports from which the IFOs (Identified Flying Objects) **have been eliminated**" -- **Dr. J. Allen Hynek, CUFOS Associate Newsletter, May 1980**
- "It becomes very much harder, in fact from my personal viewpoint, impossible, to find a trivial solution for all UFO reports, which of course is the contention of the skeptics, if one weighs and considers **the caliber of some of the witnesses.**" -- **Dr. J. Allen Hynek, Smithsonian UFO Symposium, Washington, DC, September 1980**
- "It should prove to become **a standard reference** on the library shelves of those who seek to identify the core identity of the anomalous atmospheric phenomena... [There is a] lack of evidence for the reports being based on hallucinations or other misperceptions.. .The reports represent **currently unknown phenomena**, being completely different in nature in an 'overwhelming majority of cases' from known atmospheric optics effects or **technical experiments in the atmosphere.**" -- **Dr. Richard Haines, foreword to the CUFOS pirated reprint of the study**

Hynek and Haines on 'Gindilis Report'

- An article jointly authored by Hynek and Haines appeared in the *Journal of UFO Studies*, volume II (1980). It stressed the "similarity of results" of the Soviet statistical study with other Western studies. Despite the concentration of 1967 cases (JEO: i.e., mostly IFOs!), "The **essential agreement of the Soviet study** with those made in other countries shows that this does not seem to have introduced a temporal bias."
- However, it turns out that this conclusion proved **exactly the opposite** of what Hynek and Haines thought it proved. It actually showed that a statistically manipulated collection of IFO cases (which actually comprise the heart of the Gindilis Report) gives numerical results absolutely indistinguishable from similar manipulations of allegedly true-UFO cases. Ergo, the class of UFOs and the class of IFOs are really **statistically indistinguishable**, a conclusion which skeptics had been asserting all along.
- Hynek and Haines interpreted the significance of the Soviet study as proving mathematically that UFOs are real, or that "**A heretofore unrecognized (by science) phenomenon exists and is worthy of serious study**," in their own words. "The conclusions of the Condon Report," they continued, "are thus totally reversed and **the UFO phenomenon at one stroke becomes a legitimate subject for serious scientific attention**. It is a great blow to the bastion of ridicule which has heretofore been so effective a barrier to the exercise of **proper scientific curiosity** in this area."
- "It seems incredible that the curiosity of the scientific fraternity has not been aroused," they complain, in the closing paragraph.

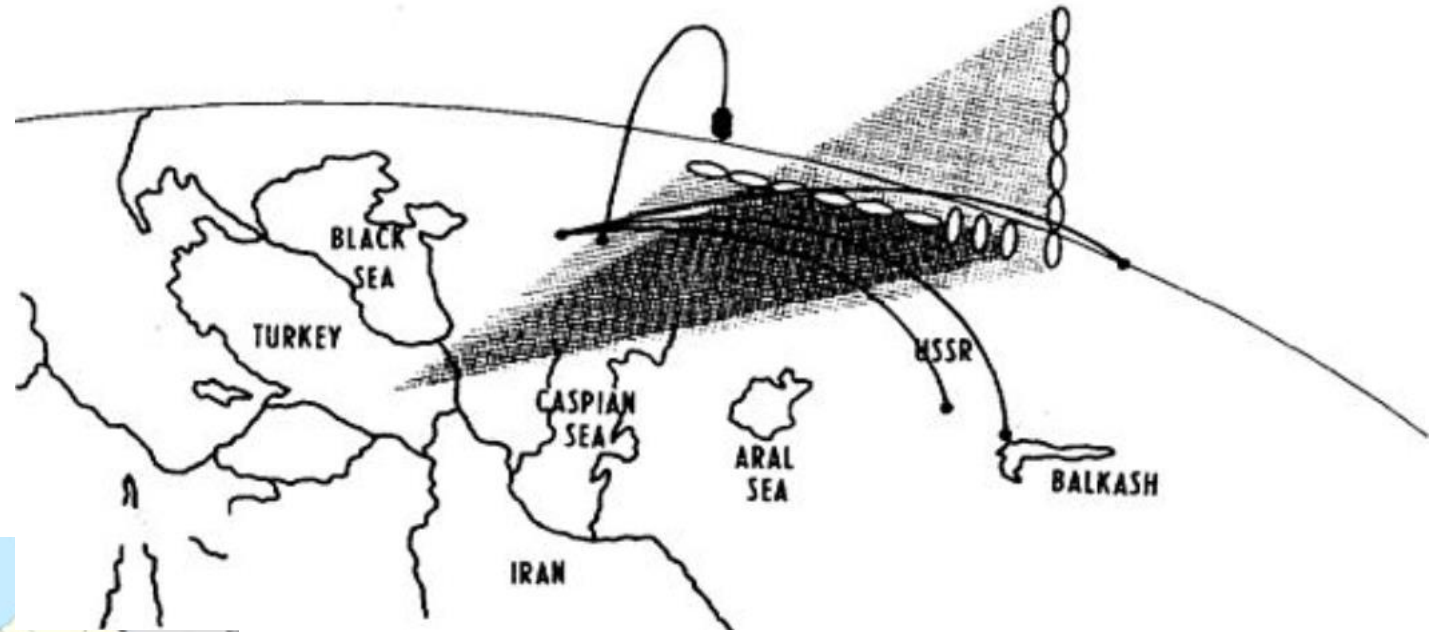
Jacques Vallee finds Gindilis report confirms his theories

- Here is what Vallee quotes from the report. He is particularly interested in the Soviet emphasis on the polymorphous aspect of the phenomena:
- *These changes include change of shape of the object (transition from one shape to another); separation of one object from another; the connection of one object to another; "extinction" of a luminous object; gradual dissipation of an object; organization of a new object. (Vallee, 171)*
- and
- *When such changes occur, we speak of several phases of forming. In each phase, the objects have a stable shape. Any change means a transition to the next phase. Phase of the phenomenon can be distinguished by other characteristics, for example, by a change in the parameters of motion. In order to emphasize that the matter has to do with changes in shape, we call the corresponding phases "forming phases". (Vallee, 172)*
- The report is said to confirm Vallee's Law of Times (explained in his book Challenge to Science), which says that close encounters peak around 9-10 pm.

The 'Missing Chapter' – US intel exploitation

- Any thorough narrative must include not only what IS seen and known, but what is NOT seen and known, about the events
- What did US intelligence agencies [CIA, DIA, NSA, etc] know about FOBS and when did they know it?
- Diyarbakir
- TBD
- TBD

What did radars
in Diyarbakir
see of FOBS?



<http://www.globalsecurity.org/space/facility/pirinclik.htm>

OPEN THEME
NEEDS WORK

https://en.wikipedia.org/wiki/Pirin%C3%A7lik_Air_Base

Is there ANY indication the intel community noticed?

- This plausible scenario provides one reasonable explanation of why the U.S. government really should be interested in UFO reports, precisely because they are not "true UFOs" but instead are something else of much greater interest to the agencies in question.
- Furthermore, the results of these "UFO studies" would necessarily have to remain highly classified. Thus, no "true UFOs" need to be involved to explain government secrecy about some UFO reports it has been interested in.
- That interpretation is supported by a remarkable NSA document obtained by UFO researchers via the Freedom of Information Act.
- Written in 1968, the anonymous document discusses various angles of the UFO problem and possible hypotheses to explain it. "Many responsible military officers have developed a mental 'blind spot' to objects which appear to have the characteristics of UFOs," the paper perceptively warned (such a 'blind spot' is precisely the thing which the Soviets hoped to exploit by painting their space tests as UFOs).
- One of five explanations for UFOs was that "Some UFOs are secret Earth projects," and in that case, "Undoubtedly, all UFOs should be carefully scrutinized to ferret out such enemy projects."

CONSEQUENCES

- October 1982 – My report linking 1967 ‘crescents’ with FOBS missions graciously published in MUFON UFO Journal
- My discussions of Russian ‘pseudo-UFOs’ on TV documentaries in the 1980s & 1990s
- April 1994 – Followup in OMNI magazine
- Continued listing of 1967 events as ‘UFOs’ in worldwide data bases
- Post-USSR collapse – appearance of historical reports about FOBS on Russian websites and spaceflight periodicals
- NO NATION TRIED TO DEVELOP ORBITAL ICBM TECHNOLOGY AGAIN

MUFON UFO JOURNAL

NUMBER 176

OCTOBER 1982

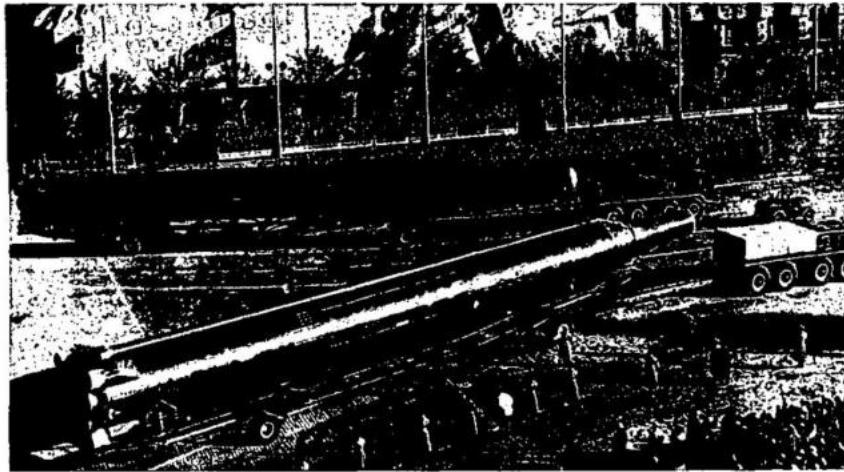
Founded 1967

OFFICIAL PUBLICATION OF



MUTUAL UFO NETWORK, INC.

\$1.50



SS-9 SCARP ICBM IN MOSCOW PARADE, NOV. 7, 1967

(See "The Great Soviet UFO Coverup," Page 6)

http://www.debunker.com/texts/soviet_coverup.html

FROM THE EDITOR (RICHARD HALL) = Jim Oberg's article on false UFOs in the Soviet Union is an important contribution to IFO lore, and contains a number of lessons for UFOlogists. I would go even further and suggest that any phenomena displaying the following features should be viewed with suspicion: slow or majestic" traversing of the sky observed from a wide geographical area, smoke trails or streamers, fiery appearance and abrupt disappearance after 10-15 seconds, and "cloud" masses or rings spreading out in angular size. In all probability, these are caused by rocket/missile launchings, satellite re-entries, fireball meteors (larger and longer lasting than briefly visible "shooting stars"), or atmospheric tests involving release of chemical vapors. It is vitally important to screen out such IFOs and not clutter up the "data base" with them. ==

“The Great Soviet UFO Coverup”, By James E. Oberg

- Russia has its UFOs, too - but with a difference. It has government coverups, too, and that is a central part of the difference.
- Cossacks in the Ukrainian countryside and sophisticated Muscovites on big city streets have stared in awe at UFO formations passing overhead. Russian astronomers at mountaintop observatories have gazed in wonder at half-mile-wide crescent UFOs which silently glide across the sky. ...
- Similar UFO reports have come in from around the globe.
- The difference between these UFOs and ones seen in other countries is that in these cases **the Soviet government secretly knows exactly what happened. Moscow knows where the UFOs came from, who launched them, how they were propelled, and why they were traveling through Soviet skies.**
- It knows all this -- and refuses to publicly admit it. It is probably the **greatest UFO coverup in history.**



Observation points of July 17, 1967 FOBS / Cosmos-169 re-entry with ground track superimposed [from Gindilis Report, Fig 20]

Oct 1982 'UFO Journal'

MUFON UFO JOURNAL

NUMBER 176

OCTOBER 1982

Founded 1967

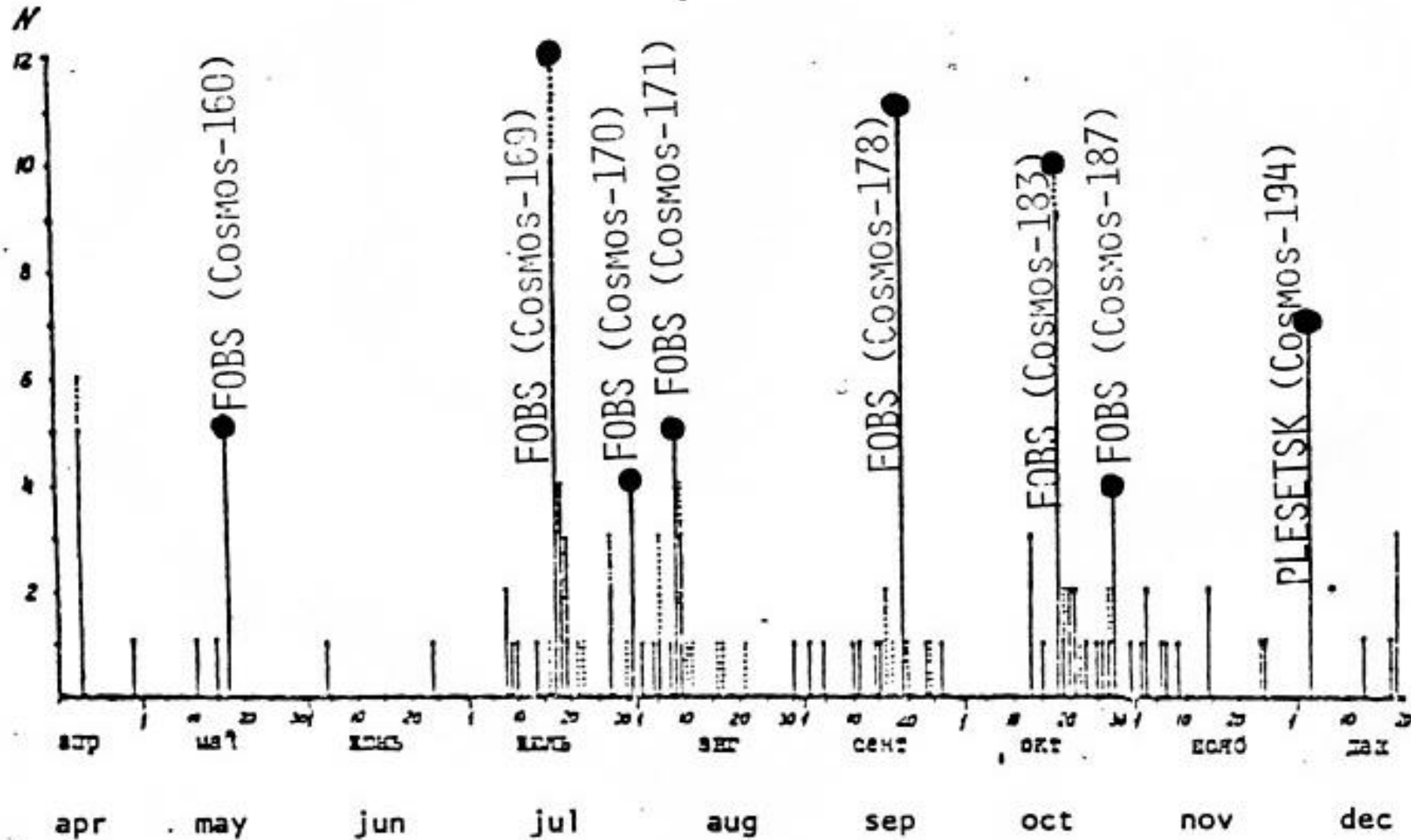
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BAR GRAPH FROM GINDILIS ["FIGURE 9] SHOWS DATES OF 1967 UFO CASES, THE BIGGEST CASES CORRESPOND TO SECRET MILITARY SPACE ACTIVITY, AS LABELED EITHER FOBS [FRACTIONAL ORBIT BOMBARDMENT SYSTEM] OR PLESETSK



Geography of Soviet missile/space activity

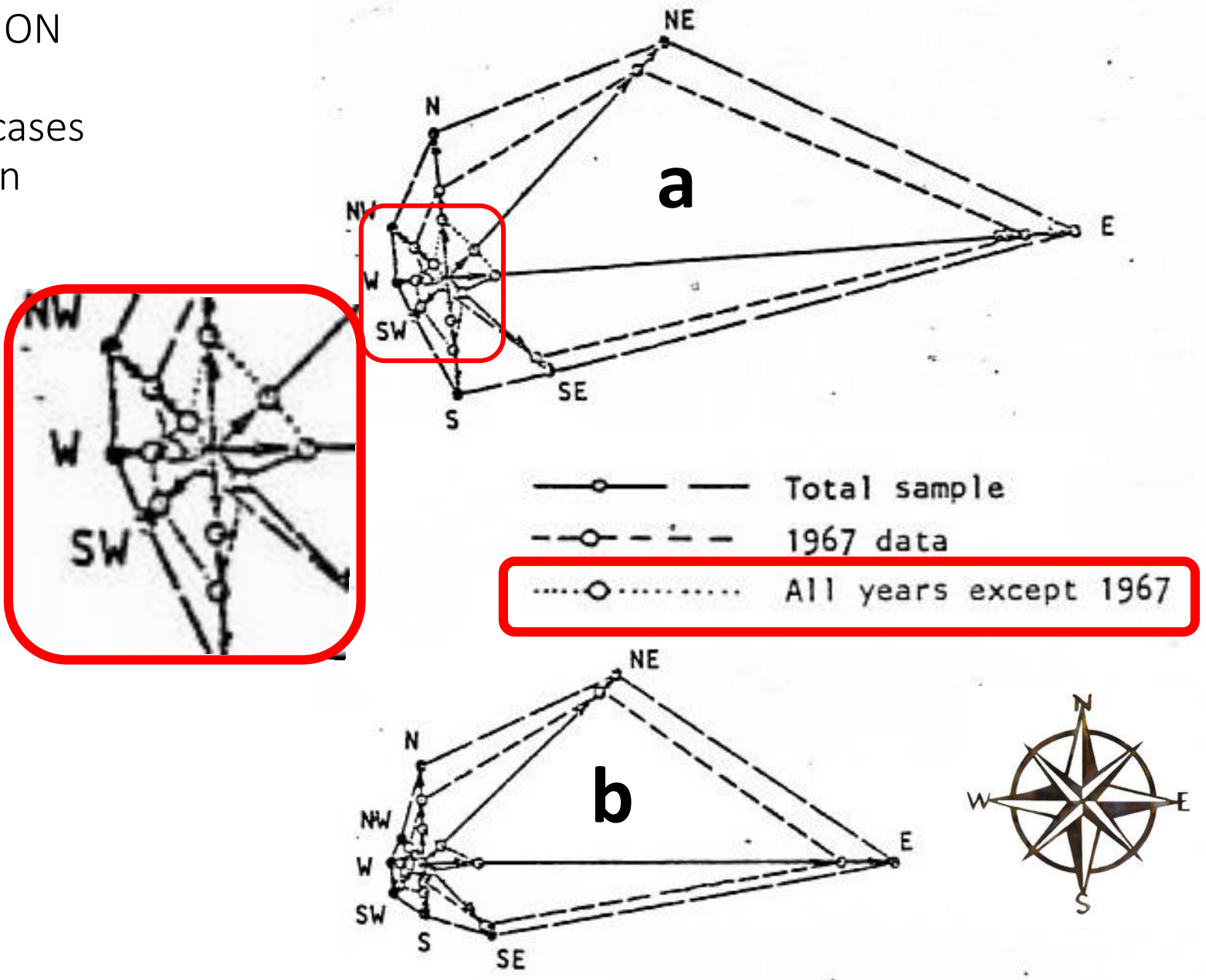
Oct 1982 'UFO Journal'
GLOBAL VIEW OF SOVIET
SPACE AND MISSILE
ACTIVITY RESPONSIBLE
FOR PSEUDO-UFO WAVES
IN THE USSR



- (A) Tyuratam Space Center (a.k.a. "Baikonur"), launch site of FOBS warheads in 1966-1970
- (B) Re-entry path of flame-shrouded FOBS warheads (always in Twilight), misperceived as "current UFOs" (pseudo-UFOs)
- (C) Plesetsk secret military space center, opened in 1966
- (D) Trajectory of Plesetsk spy-satellite Cosmos-194, seen and misperceived as "Kamenny UFO" (Dec. 3, 1967)

GINDILIS REPORT FIGURE 18.
DISTRIBUTION BY DIRECTION OF MOTION
[SHOWING DIFFERENCE BY YEAR]

- a. Number of cases, allowing only for cases of departure of objects in one direction
- b. Number of objects, allowing for all departing objects



DISCUSSION

DIRECTIONAL STATISTICS (ADAPTED FROM GINDILIS FIGURES 18 & 19)
DEMONSTRATE HOW THOROUGHLY POLLUTED WITH FOBS IFOs IS THE GINDILIS
"UFO" (OR "PSEUDO-UFO") DATA BASE (FROM ZIGEL):

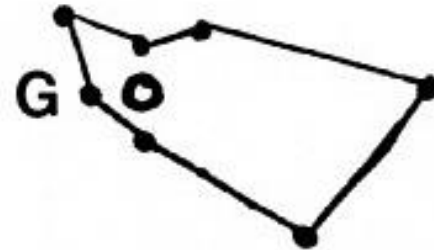
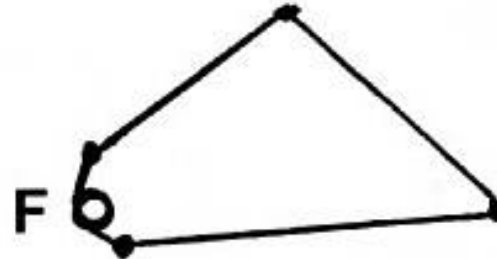
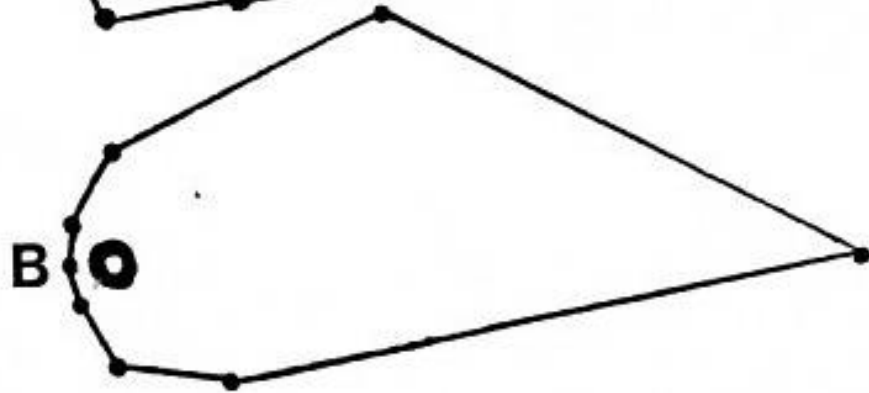
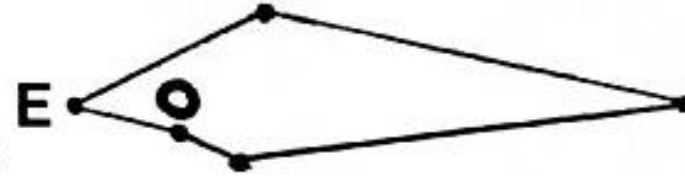
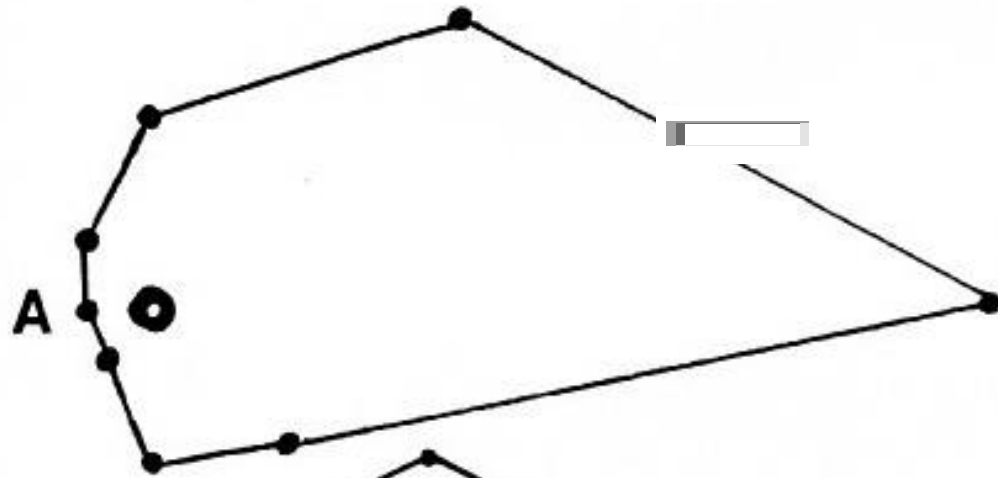
- A) DEPARTURE DIRECTIONS OF ALL CASES PLOTTED GEOGRAPHICALLY (CLOCK-
WISE FROM RIGHT: E, SE, S, SW, W, NW, N, NE)
- B) DEPARTURE DIRECTIONS OF ALL 1967 CASES PLOTTED GEOGRAPHICALLY
- C) DEPARTURE DIRECTIONS OF ALL NON-1967 CASES
- D) DEPARTURE DIRECTION (FLIGHT AZIMUTH) OF FOBS WARHEADS ACROSS
OBSERVATION AREA

COMMENT: WITHOUT THE 1967 DATA THE DIRECTIONS ARE ESSENTIALLY
RANDOM, BUT THE TOTAL STATISTICS ARE DOMINATED BY THE 1967 STAT-
ISTICS. THIS IS LOGICALLY EQUALLY TRUE BUT LESS GRAPHIC FOR ALL
OTHER STATISTICAL PROPERTIES STUDIED IN THE GINDILIS REPORT.

- E) DEPARTING DIRECTIONS OF ALL 1967 SPHERES AND DISKS (33 OBJECTS)
- F) DEPARTING DIRECTIONS OF ALL 1967 CRESCENTS (64 OBJECTS)
- G) DEPARTURE DIRECTIONS OF ALL OTHER OBJECTS, SHAPES (38 OBJECTS)
- H) DEPARTURE DIRECTION OF FOBS WARHEADS

COMMENT: THE IDENTIFICATION OF CRESCENTS AND MOST SPHERES AND DISKS
WITH FOBS WARHEADS IS PERSUASIVE, AND IN ADDITION IT APPEARS THAT
THE MAJORITY OF "OTHER SHAPES" DISPLAY DIRECTIONALITY CHARACTERISTIC
OF THE FOBS WARHEADS AS WELL.

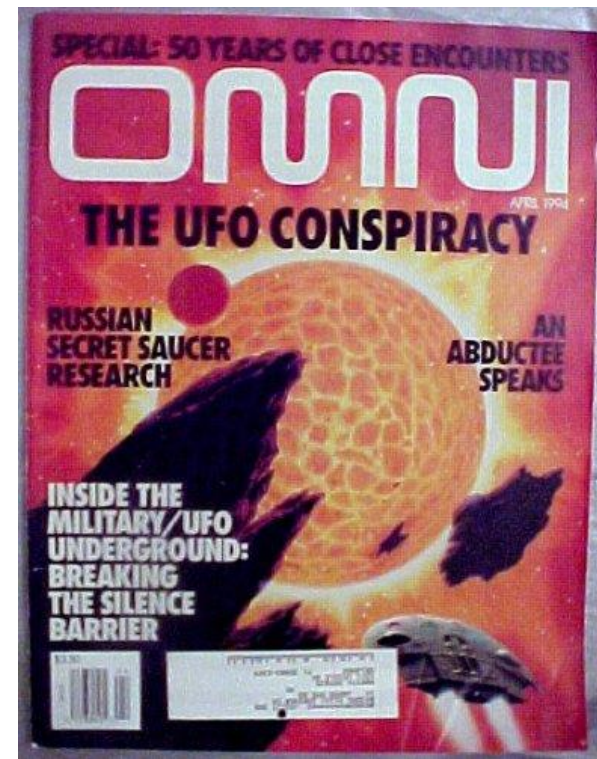
Departure direction of different shapes



OMNI magazine April 1994

[I revisit issue for mass audience]

- Day after day, the waves of UFOs returned to southern Russia.
- Cossacks on horseback saw them high in the evening sky. Pilots aboard commercial airliners and military interceptors chased and dodged them. Astronomers at observatories in the Caucasus Mountains noted their crescent shape and their fiery companions.
- It was the fall of 1967, and the Soviet Union was in the grip of its first major UFO flap. The extraordinary tales, described on Soviet television, reported in Soviet newspapers, and analyzed in a private nationwide UFO study group soon took on a life of their own.
- What the witnesses really saw back in those exciting days in 1967 were space vehicles all right, but not from some distant, alien world. They were Russian missile warheads, placed in low orbit under false registration names and then diverted back toward the planet's surface after one circuit of the globe.
- As they fireballed down toward a target zone near the lower Volga River, they seared their way into the imaginations of startled witnesses for hundreds of miles in all directions.



<http://www.debunker.com/texts/soviet.html>

Cynically pessimistic conclusion to OMNI article

- If the UFO mystery is to be solved, there is adequate data from the rest of the world outside of Russia.
- Serious UFOlogists will have to quarantine the obviously hopelessly infected UFO lore from Russia and disregard it all. Some valuable data might be lost, but the crippling effect of unconstrained crackpottery would be avoided.
- Every decade or two, the question can be reconsidered with a simple test: Do leading Russian UFOlogists still insist on the alien nature of the 1967 crescent UFOs and the 1977 "jellyfish" UFO? If so, slam the door on them again.
- Yet the temptation may be too great, especially for those who are into what I call the "fairy tale mode" of modern UFO study--those who believe the best cases are ones that happened long ago and far away, and thus are forever immune from prosaic solution. Russian UFO stories have turned out to be exactly those kinds of fairy tales.
- And if the purpose of modern UFOlogy is only mystery worship and obfuscation, only mind-boggling tall tales and mind-stretching theorizing, then it will continue to feed on the baseless bilge coming out of Russia while being insidiously and unavoidably poisoned by it.
- The reality test, then, is not of Russian UFOlogy, which has already failed, but of non-Russian UFOlogy, where the issue remains in doubt.

Rubtsev's righteous right of reply

- http://ufology-news.com/u/18672430/Ufology_News/RIAP/Rubtsov_V._Post-Soviet_Ufology_-_A_view_from_inside.pdf

And a 2016 update in Moscow:

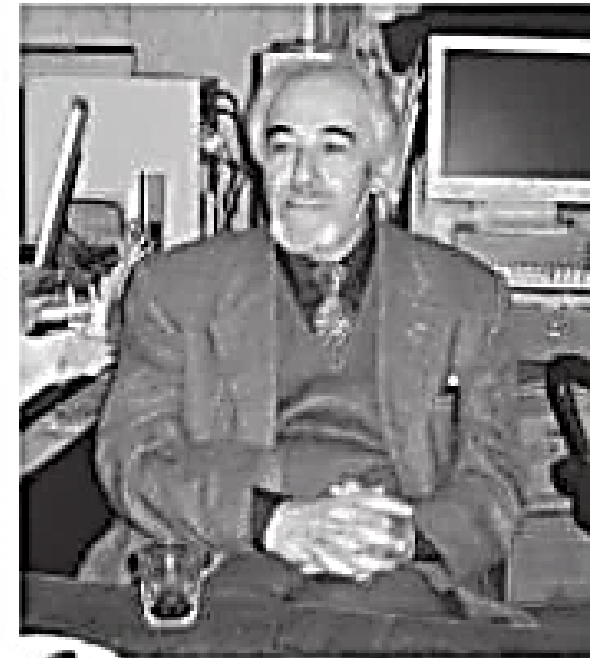
<https://themoscowtimes.com/articles/little-green-men-a-look-at-the-official-soviet-x-files-investigation-52335>

UFO websites still 'believe' in the Gindilis Report

Soviet Union: The Gindilis Study

Any official government involvement in UFOs by the former Soviet Union remains, at this writing a highly controversial matter and the source of much speculation. This history will doubtless be written, based on responsible government documents, some day, but it is, at the moment, premature. Nonetheless, it seems reasonable to present a description of one known Soviet study. The inclusion of this study in this current volume is merely to indicate that despite what rumors have occasionally suggested, there was, at least in this instance, interest in the phenomenon at high levels of government.

The work we will discuss came to the attention of the West when a document was given to NASA's Richard Haines. Dr. Haines, a physiological psychologist working at the NASA-Ames (CA) laboratories, and also a Russian scholar, was able to read and translate it. The document is entitled: "Observations of Anomalous Atmospheric Phenomena in the USSR-Statistical Analysis."²¹ It was authored by L. M. Gindilis, D. A. Men'kov, and I. G. Petrovskaya. Gindilis was a well-known astronomer and interested in the Search for Extraterrestrial Intelligence using radio telescopes and other approaches. The study was sanctioned by the USSR Academy of Sciences' Institute of Space Research (PR #473), and dated 1979. For short, it goes by the name of the "Gindilis Report."



L.M. Gindilis

Reddit comment, 2012

This is an awesome read. Here's what jumps out at me:

First of all, this report is **predominately about the 1967 wave**. A full 76% of the cases discussed come from this year (p20). This point should be kept in mind.

The authors also criticize the quality of the data they have at hand: to take just one example, only a quarter of their reports contain any atmospheric information. They even begin their discussion by saying "The analysis was based on written reports of eyewitnesses on the anomalous phenomena they observed. **The authors made no verification of the reports**". (p50)

Moving on to the introduction, I think we will all be pleased to read this: "In this report, we use the terms "anomalous atmospheric or space phenomena" or "anomalous atmospheric phenomena"...We consider the previously used term UFO to be less adequate for such work, since it contains a definite interpretation of the phenomenon observed. (p9)"

Table 3.1 shows that 15% of the cases were **mass observations** in the "tens, hundreds, and sometimes even thousands of persons." (p15)

Table 4 is interesting. 25% of the witnesses who gave their occupation were scientists, 17.5% engineers and 11% pilots (p17). And did you see the discussion of the activity coefficient? Astronomers have a **power level** activity coefficient of 7000! I checked the original Russian version which actually reads 7500 (p10). Put another way, astronomers accounted for 10 reports out of about 200 even though they only account for .002% of the total Russian population. ...

And in their discussion section, the authors conclude: "Obviously, the question of the nature of the phenomena still **should be considered open**. To obtain more definite conclusions, more reliable data must be available. Reports of observations of anomalous phenomena have to be well documented. the production of such reports must be organized through the existing network of meteorological, geophysical, and astronomical observation stations, as well as through other official channels. (p53)"

Finally, the **directional charts** on p69-73 are just awesome. I wish more maps of UAP reports would include the directional arrows.

UFOs and Government: A Historical Inquiry

By Michael Swords, Robert Powell p. 459
Anomalist Books, LLC, 2012



“This assertion [that the majority of the incidents in the study were misidentifications of secret Soviet weapons systems] is not proven.”

Whether one wishes to view the Gindilis Report as relevant to the “military or government response” to the **UFO** phenomenon is up to individual evaluation. In most countries, this report would be considered a scientific or academic report with no particularly close relationship to government. But this was the **Soviet** Union. Because the central government exercised such strict controls over the systems of the body politic in that country, and the Presidium Academy of Sciences was no exception, the publication of this work must be viewed as at least approved by the government in some sense. Given the fact that in early years the **Soviet** Press was not allowed to publish **UFO** news at all,²² this is at a minimum a change in attitude.

Skeptics in the United States have argued that the majority of the incidents in the study were misidentifications of secret **Soviet** weapons systems.²⁴ This assertion certainly is not proven. But the identity of the cases’ stimuli is not the issue here anyway. The point is merely that **Soviet** interest in the **UFO** phenomenon produced a study by high-ranking scientists, and that study was approved by the government-monitored Presidium Academy.

https://books.google.com/books?id=_Xab1hqwco0C&pg=PA459&lpg=PA459&dq=soviet+crescent+ufo+1967&source=bl&ots=6aYfk3bMI7&sig=QaTZ5rw2Thjw9Hz96cSHgaNHYGs&hl=en&sa=X&ved=0ahUKEwiboonCh7HQAhVF4iYKHcJ6B-IQ6AEIJzAC#v=onepage&q=soviet%20crescent%20ufo%201967&f=false

MANY UFO AUTHORS INSIST SICKLES ARE STILL TRUE UFOS EG: Paul Stonehill (06-21-11) "UFO's Over Russia and Eurasia"

THE 'FIERY SICKLES'
IN THE SLIDE IS A
TERM INVENTED IN
1967-8 FOR ZIGEL'S
WAVE OF REPORTS
[NOT THE 1950S]

Paul Stonehill (06-21-11) UFO's Over Russia and Eurasia

1950s: fiery sickles over Russia



Fig. 71. Зарисовка «Секрета», сделанная Николаем В.

1:04:04 / 1:25:19

<https://www.youtube.com/watch?v=wsIKOnVuLH0>

History channel: "Russia's UFO Secrets Revealed"

UFO Documentary - Russia's UFO Secrets Revealed: No More Lies



**OTHER INVESTIGATORS
DESCRIBED HOW SECRET
SOVIET MILITARY TESTS
SPARKED MANY FAMOUS
RUSSIAN UFO REPORTS**

<https://www.youtube.com/watch?v=TWHKh455IR0>

OR

<https://www.youtube.com/watch?v=OuIP3u9X-rl>

COMPETING NARRATIVES OF SEQUENCE OF EVENTS

ROCKET SCIENCE

VS

UFOLOGY

- Mid-1967 == PUBLIC MISINTERPRETS TOP SECRET SOVIET SPACE-TO-GROUND WARHEAD TESTS
- PRIVATE UFO INVESTIGATORS ENCOURAGED BY GOVERNMENT TO INVESTIGATE UFO REPORTS
- WIDESPREAD & ENTHUSIASTIC MEDIA COVERAGE
- MILITARY SUDDENLY REALIZES PUBLICATION OF FLIGHT OBSERVATIONS REVEALS DETAILS OF TREATY-BREAKING WEAPONS SYSTEM
- MOSCOW ORDERS BLACKOUT OF UFO NEWS
- Blackout will prevent foreign intelligence services from obtaining warhead targeting strategies and operational performance characteristics
- UFO experts exultant but remain utterly clueless
- NOTHING ELSE EVER HAPPENS

- Mid-1967 == Alien space vehicles visit USSR to closely study most advanced human civilization
- PRIVATE UFO INVESTIGATORS ENCOURAGED BY GOVERNMENT TO INVESTIGATE UFO REPORTS
- WIDESPREAD ENTHUSIASTIC MEDIA COVERAGE
- Kremlin recognizes observations prove reality of extraterrestrial visits and need for urgent secret program to understand UFO technology
- MOSCOW ORDERS BLACKOUT OF UFO NEWS
- Blackout will prevent Western realization that Moscow knows UFOs are real and plans to attain alien-inspired propulsion breakthrough
- UFO experts frustrated but feel proven correct
- NOTHING ELSE EVER HAPPENS

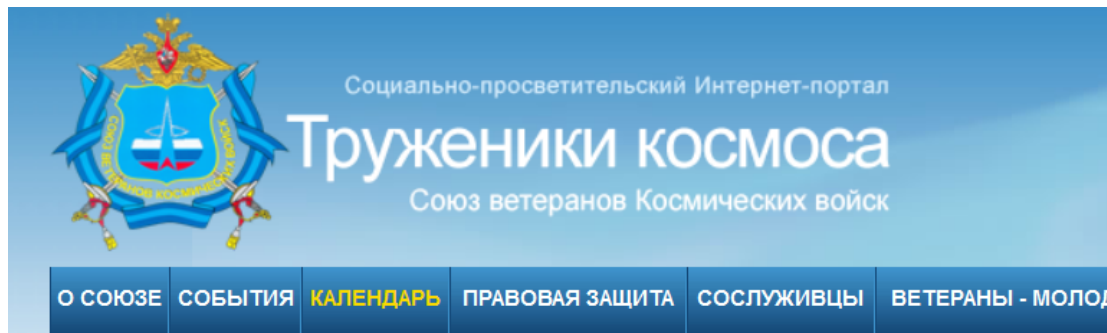
A History of State UFO Research in the USSR, by Yulii Platov and Boris Sokolov
Skeptical Briefs, CSICOP // Volume 10.4, December 2000

- ... The Results
- Practically all the mass night UFO sightings **were conclusively identified as phenomena caused by rocket launches and tests of aerospace equipment.** Researchers arrived at this conclusion by correlating the times and place of UFO sightings with schedules of launches.
- Launches of space rockets can be observed at a significant distance (thousand of kilometers - even on other continents). The main optical mechanism of this class of UFO sighting involves the scattering of solar light on the gas-dust cloud formed by the combustion byproducts of the rocket fuel.
- Thus the most favorable conditions for such observations are **under twilight conditions,** when the path of the a rocket lies in the region illuminated by the Sun, and the observer at a distance at a location still in night conditions.
- Depending on the altitude of the rocket flight, engine design, and composition of the propellant, the configuration of a gas-dust cloud and its size can vary widely. It is enough to say that in some cases the characteristic cross-sectional size of the rocket trace can reach many hundreds of kilometers.
- **It is no wonder that given their size and altitude, along with the absence of sound, these exhaust trails evoke surprise and bewilderment in an uninformed observer.**
- http://www.csicop.org/sb/show/history_of_state_ufo_research_in_the_ussr

What became of FOBS?

- The Soviet Union constructed 18 operational FOBS silos at a site west of Tyuratam and activated its first operational unit on Aug. 25, 1969.
- Two more battalions joined the first. Together, they comprised the 98th Missile Brigade.
- Anatoly Zak, “Baikonur- R-36 Facilities,” *Russian Space Web*, 30 June 2012, www.russianspaceweb.com.
- The OGCh missile had a 7.5 year guaranteed fuelled storage life and a five minute reaction time.
- Under SALT-2 the system was deactivated [in January 1983].
- http://space.skyrocket.de/doc_sdat/ogch.htm
- Authoritative history is “The Soviet Fractional Orbital Bombardment System: A Short History,” by Dr. Asif A. Siddiqi, available at <http://home.earthlink.net/~cliched/spacecraft/fobs.html>

Russian historians and veterans celebrate program



25 января 1967 г. – боевым расчётом 5-го НИИП (ныне космодром " Байконур") осуществлён пуск ракеты-носителя «Р-36орб» с космическим аппаратом «Космос-139».



» 25.01.2017

Первый удачный пуск Р-36 совершен в рамках испытаний системы частично-орбитального бомбометания.

Впервые в мире на орбиту искусственного спутника Земли выведена боеголовка и выполнен её спуск с орбиты на цель. Система частично-орбитального бомбометания была разработана в КБ "Южное" (Главный конструктор - М.К.Янгель) в середине 60-х годов. Основное назначение системы - нанесение ракетного удара по территории противника с наименее ожидаемого направления. Совершив неполный оборот вокруг Земли спутник поразил учебную цель. Система состояла на вооружении и была ликвидирована в 1979 году в соответствии с советско-американским Договором об ограничении стратегических вооружений (ОСВ-2), который, среди прочего,

запрещал наличие у сторон именно таких ракет.

<http://cosmosinter.ru/data/calendar/detail.php?ID=2063>

Труженики космоса, "Союз ветеранов Космических войск"

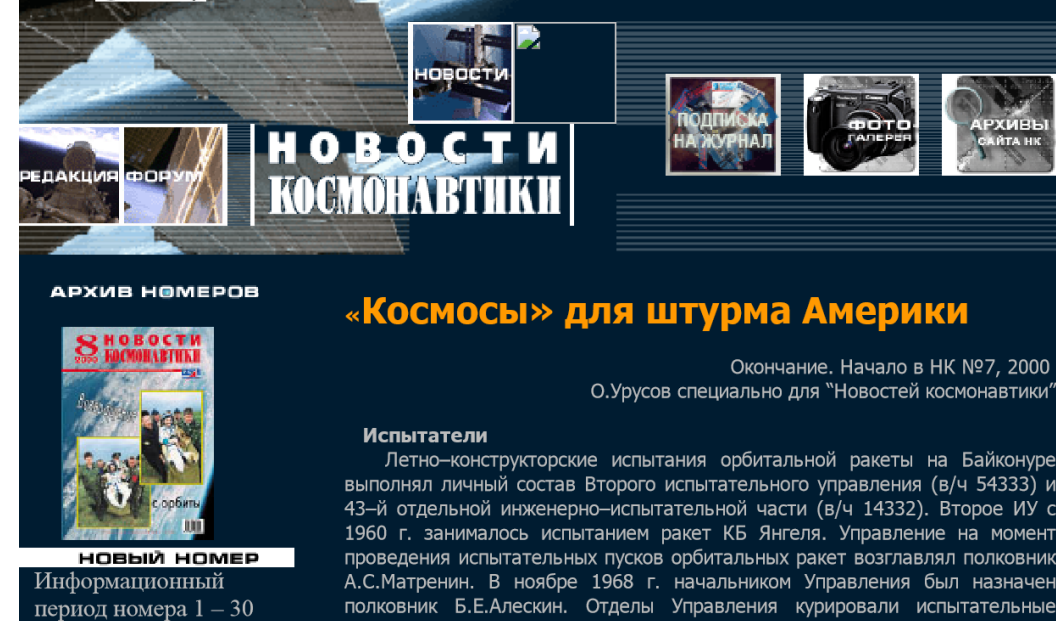
Space workers, "Union of Veterans of the Space Forces"

Впервые в мире на орбиту искусственного спутника Земли выведена боеголовка и выполнен её спуск с орбиты на цель.... Основное назначение системы - нанесение ракетного удара по территории противника с наименее ожидаемого направления....

World's first artificial Earth satellite with a purposefully-deorbiting warhead The main purpose of the system is performance of missile strike on enemy territory from the least expected direction. ...

Novosti Kosmonavtika article

- Private Russian space journal
- Published FOBS article in 2000 in two parts
- «Космосы» для штурма Америки
- **“Kosmoses” [satellites] for attack on America**
- О.Урусов специально для “Новостей космонавтики”
- O. Urusov, special to NK
- НК №7 & 8, 2000
- *militaryrussia.ru/forum/download/file.php?id=34244*



РЕДАКЦИЯ ФОРУМ

НОВОСТИ КОСМОНАВТИКИ

ПОДПИСКА НА ЖУРНАЛ

ФОТО ГАЛЕРЕЯ

АРХИВЫ САЙТА НК

АРХИВ НОМЕРОВ

8 НОВОСТИ КОСМОНАВТИКИ

с орбиты

НОВЫЙ НОМЕР

Информационный период номера 1 – 30

«Космосы» для штурма Америки

Окончание. Начало в НК №7, 2000
О.Урусов специально для “Новостей космонавтики”

Испытатели

Летно–конструкторские испытания орбитальной ракеты на Байконуре выполнял личный состав Второго испытательного управления (в/ч 54333) и 43–й отдельной инженерно–испытательной части (в/ч 14332). Второе ИУ с 1960 г. занималось испытанием ракет КБ Янгеля. Управление на момент проведения испытательных пусков орбитальных ракет возглавлял полковник А.С.Матренин. В ноябре 1968 г. начальником Управления был назначен полковник Б.Е.Алескин. Отделы Управления курировали испытательные



SUMMARY & LESSONS LEARNED

- The 'spiral/sickle UFO' flap was the most profound UFO experience of the Russian population in history and impacted social culture at all levels
- The abrupt quashing of publicity on Moscow orders was a trauma still echoing among ufologists in Russia and around the world – and still misunderstood
- The role of Soviet officials recognizing the actual stimuli of most sightings [top secret military missile/space activities] is still obscure, masked by ideological themes
- The degree to which Western intelligence agencies exploited public reports [and private manuscripts] remains obscure, but tantalizing
- Comparing reports of the 1967 apparitions, with actual knowledge of their physical nature, can help calibrate the degree of distortion and drift that is normal for witnesses, a useful insight that does not seem to have sunk in over the past half century
- The value of good 'UFO sightings' archives is once again underscored, with the recognition of the diligent efforts of so many anonymous chroniclers
- The moral of this story is that it may be VERY valuable to pay attention to 'UFO reports'
- Insights into 'back-engineering' eyewitness accounts to actual space/missile events [and malfunctions] can be useful for evaluating future events of that type anywhere else

FURTHER READING

- FOBS [Siddiqi]:
- Fobs program: <http://www.ausairpower.net/APA-Sov-FOBS-Program.html>
- R-36 missile <http://www.astronautix.com/r/r-36.html>

- Russian UFOs:
<http://mirror.bagelwood.com/textfiles/ufo/UFOBBS/2000/2612.ufo>

- <http://www.anakinovni.org/images/2016/234.jpg> 1979 launch?

1969 Dec 23 -Kosmos-316 --
an unrecognized FOBS? Probably not.

- <http://space.hobby.ru/projects/fobs.html>
- Copyright © [Александр ЖЕЛЕЗНЯКОВ](#) 1998.
- Сошел с орбиты в результате естественного торможения в плотных слоях земной атмосферы
- пуск 23 декабря 1969 года, в отношении которого ситуация не до конца ясна. Сама полезная нагрузка под названием "Космос-316" была выведена на околоземную орбиту, но с параметрами не характерными для запусков по данной программе. Она не была подорвана как во время пусков 1966 года, а сошла с орбиты под действием земной атмосферы. Часть обломков упала на территории США..

US intel remained eager to retrieve & study Soviet space debris

~~UNCLASSIFIED~~ **DECLASSIFIED**

Information on East European fluidic research, on a missile test center in France, and on Soviet exploitation of Afghanistan oil resources. The project also continued to furnish information on UAR air tactics and on Israeli Air Force tactics against MIG-21 and SU-7 aircraft.⁴⁸

Project Moon Dust

(SNFD-Gp 3) This project covers plans and actions to acquire foreign space materiel and/or information thereon, following decay and deorbit of space debris. The 1127th was involved in the recovery of nine pieces of space debris during the period of 1 July - 31 December 1970. Two of the pieces were recovered in Bogota, Colombia, and one in Pretoria, South Africa. The remaining six pieces, recovered in the United States, were of special interest.

the USSR, were of special interest.

(SNFD-Gp 3) COSMOS 316, launched by the Soviets on 23 December 1969, decayed over the midwestern United States on 28 August 1970. Group collectors recovered six pieces of debris which had impacted at five locations in Texas, Oklahoma, and Kansas.

(SNFD-Gp 3) Air Force analysts believe that COSMOS 316 was a test of a new, lighter, defensive space weapon system. The necessary operational systems -- such as the translation engines, sensors, and weapon systems -- to be found in a total defensive system were dummied by steel weights for this test. That the system's function is defensive is further supported by factory markings found on four of the items of debris.

(SNFD-Gp 3) The 5,300-pound payload of COSMOS 316 was placed into orbit by the SL-11B propulsion system. This system, an SS-9 ICBM with first and second stage, also is used to launch the fractional orbital bombardment system (FOBS). COSMOS 316 did not transmit any telemetry during its mission; analysts feel the silence was due to a power failure.

~~DECLASSIFIED~~ **SECRET**
NO FOREIGN DISSEM