

2006's Great "Tomsk Sky Spiral"



Jim Oberg

Review draft 1

October 26, 2016

AND GENERAL OBSERVATIONS
ABOUT 'SPACE SPIRALS'

Scope & Approach

- Example of one famous 'sky spiral' in outer space
- Widely assumed connection to UFO phenomenon
- Establish fundamental criterion of illumination
- Realization there are distinct classes of 'space spirals'
- Differ in methods of generation
- Differ in materials, expansion speed, duration
- Publicity accompanying "Tomsk 2006"
- Assess popular misconceptions about rocket flight appearances
- Detailed exposition of exact cause of "Tomsk 2006"
- Details of other examples of identical cause
- Summary & Conclusions
- Further Reading

Missiles and spacecraft can create visible spirals in space through several distinctly different processes

- Post-launch booster sep via immediate propellant venting
- Later 'safing' through surplus propellant dump
- ICBM warhead spin-up at bus deployment
- ICBM upper stage spinning 'thrust dumping' – programmed
- ICBM upper stage spinning 'thrust dumping' -- malfunction
- Upper stage failure during ascent with tumbling ruptured tank
- Payload failure in orbit with fluid leak
- On-orbit propulsive maneuver with loss of attitude control
- Deliberate waste water or tracer gas release
- Other

Different events will differ in ejecta velocity, plume spread and duration, plume thickness, number of plumes, rotation rate, and other factors

Composition, speed of spiral can vary enormously

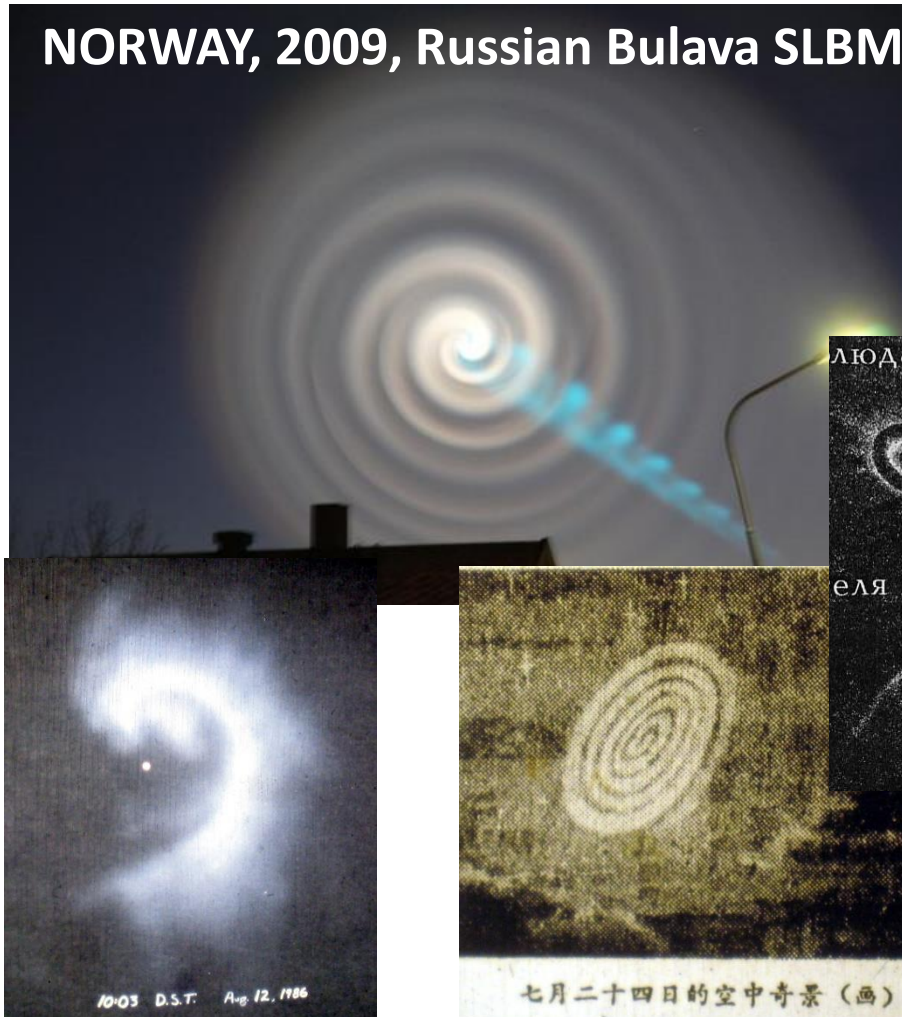
- Combustion products, water, liquid oxygen, hydrazine
- Fast versus slow dispersal
- Depends on tumble rate of dispensing object
- Some releases form clouds rather than spirals
- Interaction with air varies with altitude
- Visibility depends on sunlight
- Very rarely –
 - Plume cloud observed falling into upper atmosphere
 - Plume cloud entering or emerging from Earth shadow

“Spiral” is extreme case of venting processes

- Basic process is venting/expulsion of material from space vehicle
 - Rate of tumble of vehicle and narrowness of venting flow determines ‘spiral-ness’ of resulting plume
-
- tbd
 - Tbd

Sometimes it can be pretty awesome.....

NORWAY, 2009, Russian Bulava SLBM

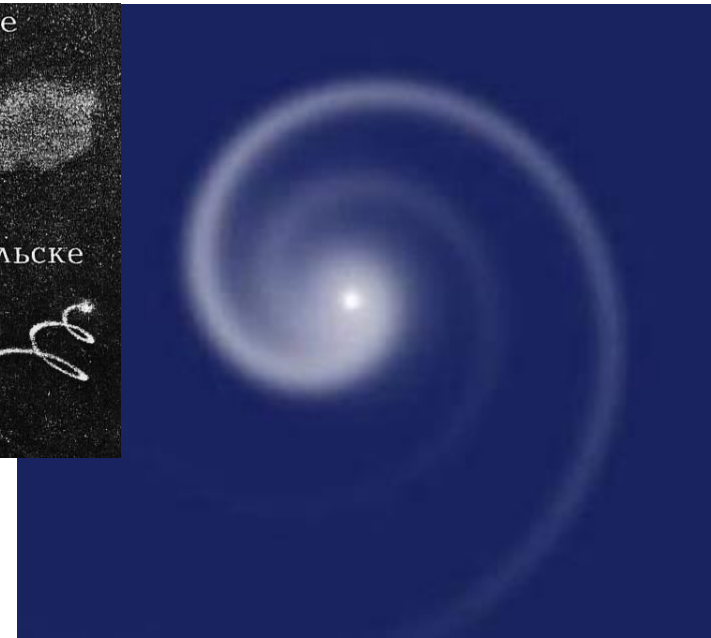
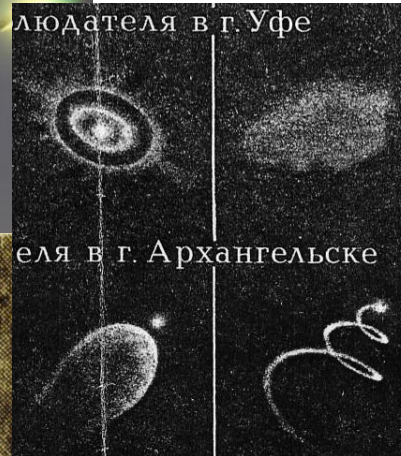
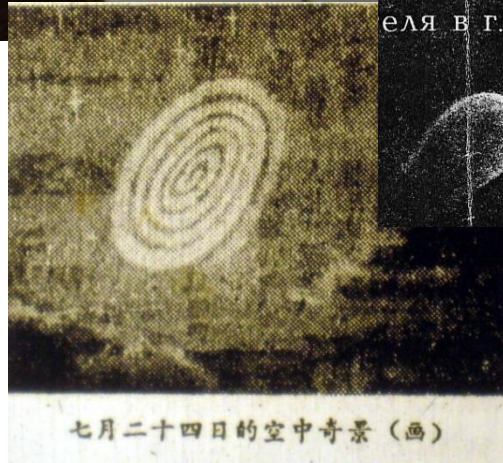


SKY SPIRALS

[left] Opened thrust dump ports

[below] Post insertion prop dump

1986 US East Coast, China, Australia



... and some relate to missile/space missions not yet identified.

examples

- tbs

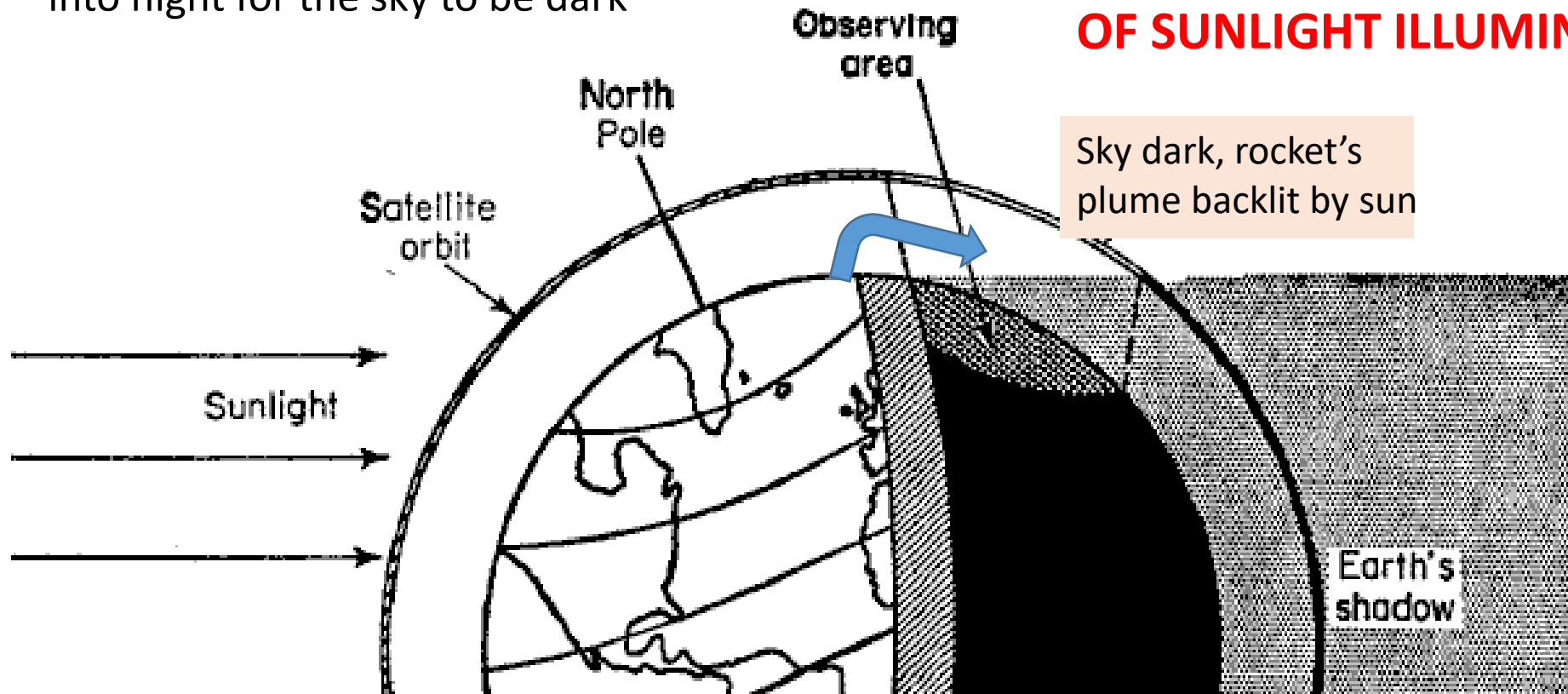
Understanding the nature of the illumination

- Vast majority of observations are of sunlit clouds
- Some chemoluminescence experiments
- Self-illumination by large engine firing is still weak
- Rare occasions of one vehicle engine illuminating plume of neighboring vehicle [eg SLBM volley fire at night]
- Small-scale near illumination may come from vehicle lights
- Space shuttle 'reaction control system' thrusters at night
- IR observation of shuttle 'Orbital Maneuvering System' plume

Evening twilight visibility of ascent plume

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

**SPECTACULAR VISIBILITY
DUE TO NARROW RANGE
OF SUNLIGHT ILLUMINATION**



FOCUS OF THIS REPORT == TOMSK, SIBERIA, 2006 [no date specified]

The Russian Spiral UFO LIGHT 2006

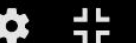
Uploaded on Dec 10, 2009

70,017 views



<https://www.youtube.com/watch?v=YG-3S2WKP6Y>

▶ ▶▶ 🔊 0:30 / 0:34



In Russian cities,
crowds on the
street.... WITH
POCKETCAMS ...
have reported
amazing glowing
clouds in the sky
more frequently.
NOTE: NOT TOMSK



<http://www.youtube.com/watch?v=3ilgesHH9fg>

Topol missile watched in Astrakhan -- June 7, 2012

More views of viewers of left-to-right moving cloud [not the Tomsk spiral]

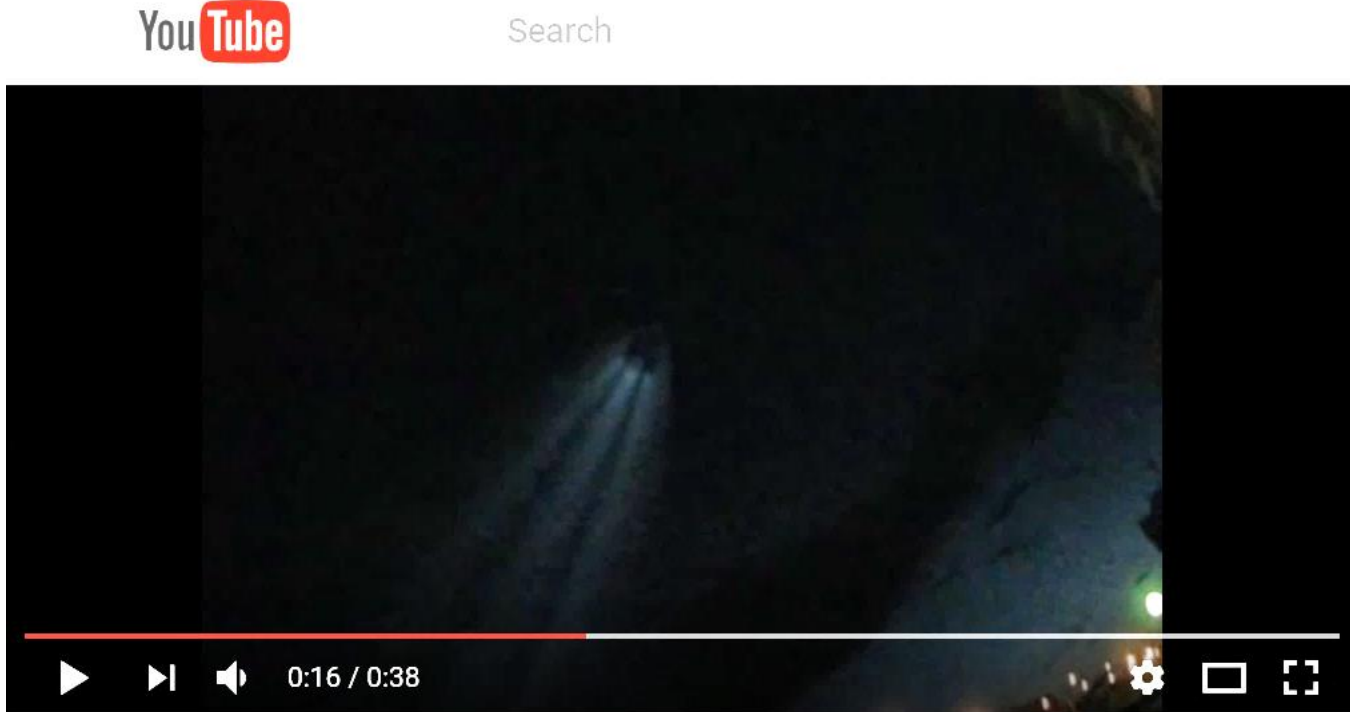


Excited viewer recounts detailed observation [Chelyabinsk, 2011]



<https://www.youtube.com/watch?v=ItrQH34SKOQ>

TOMSK-2006 // Early posting, no city, wrong date



unreal is real



Alexey8240

Subscribe 0

Uploaded on Aug 26, 2007

[his only upload ever]

UFO in Siberia sky 11.14.2006

1,748 views

[JEO: Was actually 09.14.2006]

<https://www.youtube.com/watch?v=ur-PCzU--lQ>

Discussion [1748 views]

- Абаон-- Да, кажись не в Братске... Исправлю заголовок.
- Yes, it would seem not in Bratsk. I'm fixing the header
- Sabaon -- К сожалению, не знаю. Видео достал в местной сети, примерно в 2007 году.
- Unfortunately, I don't know. I pulled the video off a local network, about 2007.

**SAME VIDEO, NOTE LENGTH.
CALL IT "TOMSK-38"**

НЛО (UFO) – DeAlien

203 views

Denis Komarov,

Uploaded on Sep 3, 2009

length 0:38

Было это 14 сентября 2006 года. Музыка моя. Город мой!

This was September 14, 2006. The music is mine. The city is mine.



0:05 / 0:38

<https://youtu.be/wi3iTTlAClk?t=8>



НЛО в Северске (возле Томска) UFO in Seversk [near Tomsk]

Uploaded Aug 30, 2008 by "sabaon"

.. 12,024 views

снято на любительскую камеру...

Taken with amateur camera

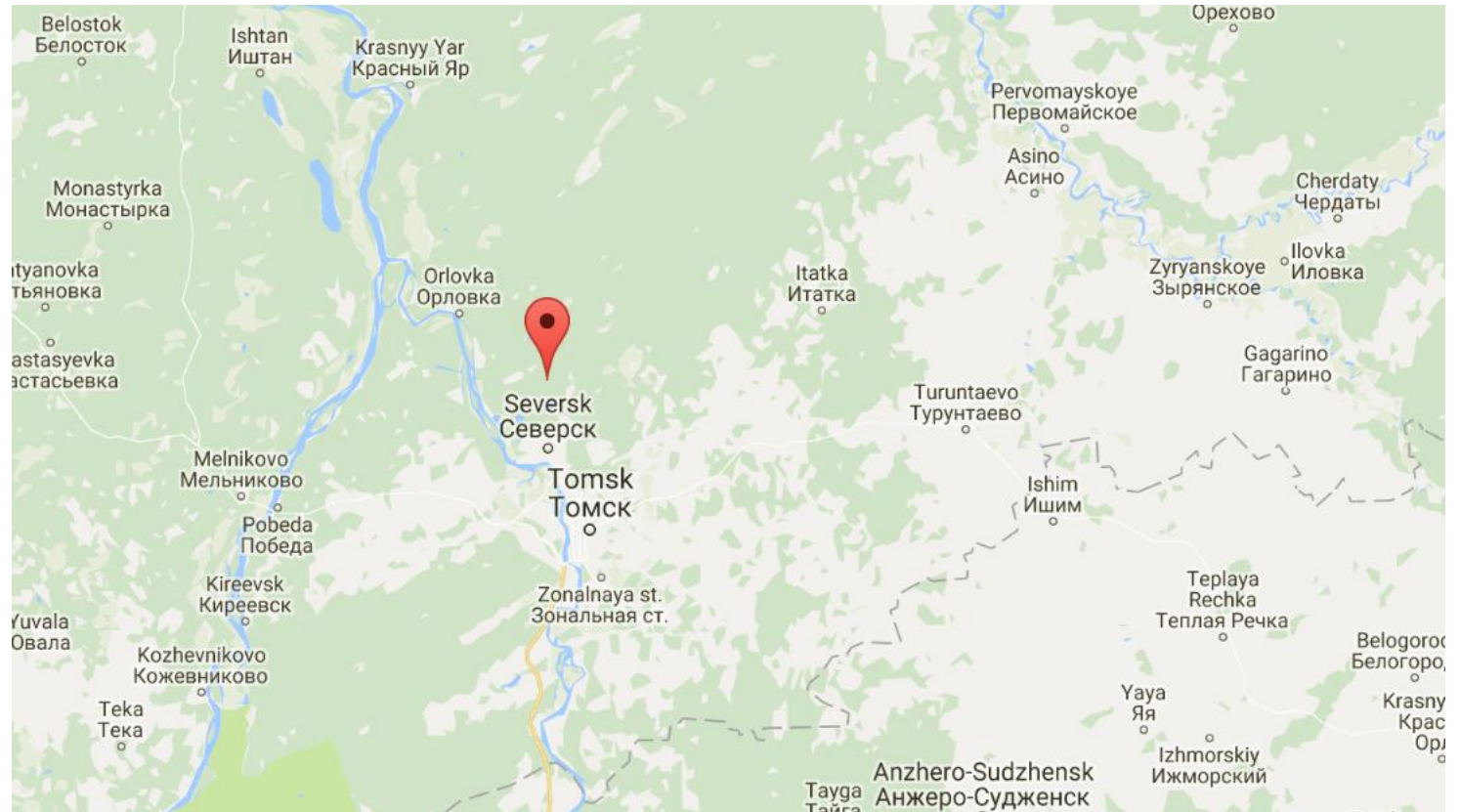
<http://www.homeworkstation.net>

Map lookup

56.7169° N

84.8804° E

Alt 123 m



<https://www.youtube.com/watch?v=mZ9M-LxWFW4>

Searching on “НЛО Северск” found more posts of same video

- **НЛО над Северском 2007/ UFO in Seversk 2007**
- <https://www.youtube.com/watch?v=HLQZa3t1BDE> [same video]
- [максим яковлев](#) on **May 19, 2009** // 10,842 views
- Repost <https://www.youtube.com/watch?v=So4so-Rvxo0>

Поиск

Картинки

Видео

Карты

Маркет

Ещё

**НЛО В ТОМСКЕ! В шоке. - Город.томск.ру**[gorod.tomsk.ru > index-1158250505.php](http://gorod.tomsk.ru/index-1158250505.php) ▼

Kris 15 сентября 2006 г. 00:15. Подумаешь **НЛО**, вот если б оно упало в **Томске**, ещё ниче, а так не интересно).

**Недалеко от Томска в небе заметили «НЛО» | The Tomsk...**[tomsk-room.ru > nedaleko...tomska-v-nebe-zametili-nlo...](http://tomsk-room.ru/nedaleko...tomska-v-nebe-zametili-nlo...) ▼

Новый **Томск Room**. Что с нами стало? ... Новосибирцы засняли на видео появление «**НЛО**», но астрономы предполагают, что неизвестный светящийся шар мог...

**скачать видео фильм : НЛО в Томске 14.09.06**[pokazuha.ru > view/topic.cfm...](http://pokazuha.ru/view/topic.cfm...) ▼

Если Вы уже видели эту публикацию, станьте VIP! Мы будем отбирать для Вас только только просмотренное. **НЛО в Томске 14.09.06.**

**Томск. Вчера Видел НЛО... есть видео... | Форум**[hip-hop.ru > forum/tomsk-vchera-videl-nlo-est-video...](http://hip-hop.ru/forum/tomsk-vchera-videl-nlo-est-video...) ▼

бля буду это **НЛО** ..по телику видал уже такое...буквально на днях по 1 каналу..там расчес был за них охуительный..СТип давай продавай эту запись каким нибудь уебкам из насса или ещё

15 сентября 2006

Нашлось 257 тыс. результатов

[Дать объявление](#)[Показать все](#)

YANDEX.RU
search engine
“UFO Tomsk 2006”

<https://yandex.ru/search/?lr=110762&msid=1476762696.30247.20944.11749&text=%D0%9D%D0%9B%D0%9E%20%D0%A2%D0%BE%D0%BC%D1%81%D0%BA%202006&p=0>

Россияне умудрились поймать НЛО (фото)

17.09.2006 14:56

Недавно жители Томска стали свидетелями появления в вечернем небе над городом НЛО. На любительских видеозаписях высоко в небе был отчетливо виден светящийся предмет, испускающий три длинных луча. Как сообщает **Интерфакс**, спустя несколько минут объект превратился в яркую точку, которая двигалась по закручивающейся спирали траектории, оставляя короткий след.



Russians managed to catch UFO

Recently, residents of Tomsk witnessed the emergence of a UFO in the night sky above the city. In amateur videos a glowing object emitting three long beam was clearly visible high in the sky. According to Interfax, a few minutes later the object turned into a vivid point that was moving along a twisting spiral trajectory, leaving a short trail.

NOTE: Video from 17.09.2006 is identical to undated Tomsk spiral ["video-38" after its length]

<http://www.from-ua.com/news/87748-rossiyane-umudrilis-poimat-nlo-foto.html>

A UFO DIDN'T FLY PAST HERE? WHAT DID TOMSK SEE LAST NIGHT?

<http://www.tv2.tomsk.ru/video-chas-pick/zdes-ne-proletalo-nlo-cto-videl-tomsk-proshloi-nochyu>

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ДО

Google™ Пользовательский п

Час Пик

Час Пик Суббота

Здесь не пролетало НЛО? Что видел Томск прошлой ночью?

17:29 15.09.2006

Автор: Надежда Древаль, Кирилл Андронов

Свидетелями неопознанного летающего объекта в небе Томска стали жители города. Это произошло в четверг, 14 сентября. В 8:45 в небе над Томском появилось яркое, светящееся тело, которое медленно двигалось в северном направлении. Оно имело форму сферы, которая медленно двигалась в северном направлении. Спутник - выдвигались самые разные. Начиная от особых дельтапланов, изобретенных в нашем городе, и заканчивая странным светящимся объектом, который видели накануне многие жители Томска. Михаил и Юлия в этот момент как раз выходили на работу. Они захотели сфотографировать необычное зрелище.

Михаил Белстар, очевидец: Мы вышли с работы, и увидели объект, похожий на комету, который двигался и закручивался. Подобное явление томичи наблюдают - не первый раз. Вероника Гупивичка была свидетелем похожего случая в кон

Residents of the city and region became witnesses of an unidentified flying object in the sky over Tomsk on Thursday. About 8:45 a glowing sphere appeared in the sky which slowly moved northward. Then it started to spiral and disappeared. [translated by JEO]

Жители Томска увидели в небе НЛО

15 сентября 2006, 12:15

Жители Томска в четверг вечером стали свидетелями появления в вечернем небе над городом НЛО.

ВЗГЛЯД
ДЕЛОВАЯ ГАЗЕТА

На любительских видеозаписях высоко в небе был отчетливо виден светящийся предмет, испускающий три длинных луча. Спустя несколько минут объект превратился в яркую точку, которая двигалась по закручивающейся спирали траектории, оставляя короткий след.

- <http://www.vz.ru/news/2006/9/15/49052.html>

Tomsk residents catch sight of UFO in the sky

[same text as from-ua.com link]



- **Неопознанный летающий объект видели накануне жители Томской и Кемеровской областей** [Первый канал -- 15.09.06] -- Там предположили, что за **НЛО** приняли ступень ракеты, запущенной как раз в это время с Байконура. Действительно, вторая ступень носителя "Союз" отделяется и падает...
- **Unidentified flying object seen last night by inhabitants of Tomsk and Kemerovo oblasts** -- They speculated there that they took a rocket stage, launched just at this time from Baikonur, for a UFO. Actually, the second stage of the Soyuz booster separates and falls.
- **НЛО или авария на Байконуре?** [Уфолог.ру -- 17.09.06 в 14:48] -- Светящийся предмет провисел в воздухе несколько минут, затем превратился в яркую точку и исчез по спиральной траектории, оставляя инверсионный след. На видеозаписях, сделанных очевидцами...
- **UFO or accident at the Baikonur Cosmodrome?** – A luminous object remained in the air for a few minutes, then turned into a bright point and vanished on a spiral path, leaving an inverted trail. On video, recordings made by eyewitnesses.
- **Жители Хакасии и Красноярска видели НЛО, а специалисты — запущенную с Байконура ракету** [АИС -- 17.09.06 в 03:22] -- Председатель томского областного комитета по вопросам ГО и ЧС Виктор Лощинкин сообщил, что за **НЛО** могли принять запуск ракеты
- **Inhabitants of Khakassia and Krasnoyarsk saw a UFO but experts – a rocket launched from Baikonur** – The chairman of Tomsk oblast Committee on civil defense and emergency Viktor Loshchinkin said that they can take the launch of a rocket for a UFO.

Видео:

http://gorod.tomsk.ru/doc/14-09-06_2049.3gp



14 сентября 2006 г. | [Томское](#) | 37257 просмотров

НЛО В ТОМСКЕ! В шоке. UFO in TOMSK! In shock!



<http://gorod.tomsk.ru/index-1158250505.php>

<http://tomsk.fm/watch/1383>

- Эта запись была сделана в Северске через восемь минут после запуска ракеты с Байконура. Здесь видно как отделяется первая ступень. This recording was made in Seversk within eight minutes after the launch from Baikonur. Here you can see how the first stage separated. [THIRD stage]
- По "ящику" говорили, что это ступень от ракеты. By "mailbox" they said that this is a rocket stage. [Soviet-era slang for top secret military facility]
- тоже видел.. в Томске на Южке. Вот только пролетала намного выше и разглядеть было что-либо нереально) Но три луча все таки видно было. I also saw it ... in Tomsk on Yuzhk Street. Only it flew much higher and we could see it was something unreal.) But all the same, three beams were visible.

НЛО в Томске и Томской области

UFO in Tomsk and Tomsk Region

The most famous case of mass sighting of a UFO in Tomsk dates from September 15, 2006 year. Dozens, if not hundreds, of residents of Tomsk that night witnessed the emergence unidentified flying object in the night sky above the city.

According to numerous eyewitness reports and amateur video, high in the sky a glowing object was clearly visible emitting three long beams. A few minutes later the object turned into a vivid point that was moving along a twisting spiral trajectory, leaving a short trail.

Numerous witnesses of the unusual incident indicate that it was literally a UFO, not a rocket, and even much less an atmospheric phenomenon

"We left work from Herzen #72B, somewhere about 8:30 PM, and we see in front of us something comet-shaped. " said one eyewitness. –"It got closer. We started yelling – some kind of comet is headed for us, and we will all perish. It had some sort of bright ball. It became even brighter, became deformed and transformed into a saucer -- something round with a hole in it! When it moved toward Shevchenko, the saucer disappeared.

Other eyewitnesses of the incident described the behavior of the ball this way: "It flew slowly. It shined. Had a huge plume of rays. It was transformed and changed shape. It flew low over the roofs of buildings. And then abruptly evaporated."

"This ball that was initially as a comma, then began to twist, and disappeared behind a house. I saw all this for a few seconds, all in shock, freaking out. "... [translation – Jim Oberg]

http://nirvana.fm/~Wonder/81310_NLO_v_Tomske_i_Tomskoj_oblasti

MY PARANORMAL LIFE

Paranormal News, Videos and More.



ABOUT ME



E Ewan DS

Hi I'm Ewan, I'm a blogger, artist and a man with many interests.

[View my complete profile](#)



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WEDNESDAY, JANUARY 10, 2007

Video of a spiraling UFO over russia

Not much info came with this video, just that it's a ufo spiraling out of a wormhole in Tomsk Russia. It's a really amazing watch, at first it shows what looks like a comet trail with a bright light at the head, then it goes dark and appears to open up releasing the ball of light which then starts to spiral, very pretty.

I haven't seen anything quite like it before and I can't begin to explain what I think it may be so I won't.

Sure hope it's not a fake.

UFO - Spiral Slips out of Wormhole in Tomsk Russia

<http://myparanormallife.blogspot.com/2007/01/video-of-spiraling-ufo-over-russia.html>

In last decade this event
has achieved UFOric fame
and superstar status

300,000+ hits on Google
for “tomsk ufo 2006”

Yahoo! 5,000,000+
Bing ~6,000,000

Google tomsk ufo 2006

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About 317,000 results (0.69 seconds)

UFO 2009 11 09 Norwegen Oslo Leucht Spirale 04von06 2006 Tomsk ...
<https://www.youtube.com/watch?v=spGx6KvIVV4>
Jul 4, 2016 - Uploaded by Prime flash
UFO 2009 11 09 Norwegen Oslo Leucht Spirale 04von06 2006 Tomsk Russia Teil
2von2. Prime ...

UFO 2009 11 09 Norwegen Oslo Leucht Spirale 04von06 2006 Tomsk ...
<https://www.youtube.com/watch?v=Qaaeb9MOAVU>
Jul 4, 2016 - Uploaded by Prime flash
UFO 2009 11 09 Norwegen Oslo Leucht Spirale 04von06 2006 Tomsk Russia Teil
1von2. Prime ...

Spiral UFO coming out Wormhole or Hyperspace ? Tomsk Russia ...
ireport.cnn.com/docs/DOC-367235 ▾ iReport ▾
Dec 10, 2009 - I DID SOME RESEARCH FOUND OUT THIS HAPPEN IN RUSSIA IN 2006,ALMOST THE SAME THING.KINDA WERID HAPPENING TWICE.

Doctor Fong's House of Mysteries!: UFO - Spiral Wormhole in Tomsk ...
drfong.blogspot.com/2006/12/ufo-spiral-wormhole-in-tomsk-russia.html ▾
UFO - Spiral Wormhole in Tomsk Russia. Dr. Fong Says: Strange. I have seen most of the UFO footage on the web that is worth seeing. I found this ... 2006 (174).

Multiple Updates - Norway Spiral - with Videos - UFO Casebook Files
ufocasebook.com/2009d/norwayvideo2.html ▾
Dec 10, 2009 - UFO Casebook investigates UFOs Aliens through UFO Case Files, UFO Pictures, Photographs, Videos, Movies. ... Tomsk, Russia - 2006.

Surfing The Apocalypse Network - UFO IN TOMSK
www.surfingtheapocalypse.net/forum/index.php?id=151735 ▾
UFO IN TOMSK (STA BREAKING NEWS and ARCHIVES). by LightEye, Wednesday, September 20, 2006, 14:52. <http://www.youtube.com/watch?v=...>

Ufo Oroszország Tomsk 2006, találmány, úrhajó - Videá
videa.hu/.../ufo-oroszország-tomsk-2006-talalmany-urhajo-ciq7XR... ▾ Translate this page

PROSAIC HYPOTHESIS – A SUNLIT ROCKET PLUME

- Similar reports have been filed for decades
- Proliferation of camcorders with internet posting has enormously magnified public exposure to such images
- Sadly, they rarely provide basic context such as date/time and viewing azimuth/elevation, even observer's location
- Although discussions included comments from people saying it looked like a rocket, overwhelming responses insisted it couldn't be a rocket
- When specific reasons were given, gross misunderstanding was shown of what real rockets and their plumes actually look like

Rocket plumes aren't like jet plumes or flamethrower plumes or smoke plumes or anything humans have ever seen before

- First 50-60 kilometers of ascent, smoke trail is narrow, hemmed in, particles stopped and then buoyed by air
- This 'floating' non-vertical-moving portion is quickly zig-zagged by strong high-altitude crosswinds
- When rocket enters region of purer vacuum above the von Karman 'line' [~ 100 km], particle motions unimpeded, so the plume widens to fan shape
- Both engine exhaust [wide fan] and hydraulic pressure generator [to steer engines] exhaust [narrow trail] can leave visually distinguishable plumes
- Earlier [lower] portions of plume may not be fully sunlit for some 'twilight flights' [time-of-day dependent]

In space, plumes are even weirder than THAT!!

- Unlike atmospheric plumes suspended by buoyancy, plumes in space are clouds of particles following ballistic trajectories so they behave in a literally unearthy manner
- Exhaust velocity is typically ~ 3 km/sec so early in ascent the particles are quickly flung back down into the atmosphere
- But as vehicle climbs and accelerates and gradually levels off, with speed in the range 3-4 km/sec or more [8 km/sec is orbital velocity], the particles ejected from an already-fast-moving vehicle still retain significant forward speed, some with significant upwards angle.
- As a result, particles in the upper plume are 'lofted' en masse through space, and seem to 'follow' the missile.
- The cloud of them gradually falls behind, and only slowly disperses and falls
- This odd effect is enhanced as upper stages pitch over closer to horizontal – and a special category of recent Russian ICBM tests actually burn the third stage angled slightly downwards, thus giving plume particles a substantially greater UPWARDS initial component and extending their lifetime before air impact

Can't be a rocket [youtube comments] because.....

Missiles do not form spirals [and] do not leave perfectly concentric ringed tails

Missiles do not form small white spheres of light that turn into blackholes.

No exploding rocket will create a moving spiral, static in the air, stay there for minutes and not be affected by gravity

There are a few dozen of these vids floating around, and they come from all over the world

I've never seen a Russian missile, that glowed white, had three translucent tails about a mile long, and spiraled, leaving a tail of light

It's nowhere near any known rocket testing facility.

When rockets spiral out of control, ... they go everywhere, not in perfect, tight little spirals

Will Rogers once joked, "It ain't what you don't know what makes you look foolish, it's what you DO know what ain't so."

Spiral UFO coming out Wormhole or Hyperspace?

Uploaded on Apr 10, 2007
220,974 views



Spiral UFO coming out ' Wormhole'
Hyperspace ? Tomsk Russia 2006



0:25 / 2:43



<https://www.youtube.com/watch?v=bGrRTdoltv4>

The Russian Spiral UFO LIGHT 2006



[The UFO Report](#)

70,0

Suggested by The UFO Report
15:03 The Best Of The UFO Report Vol.1



0:10 / 0:34



<https://www.youtube.com/watch?v=YG-3S2WKP6Y>

YOUTUBE comments – CANNOT be rocket because....

- aPOTg == @Backmasker2008 honestly, YOUR not that smart to think this is a missile. missiles do not form spirals, missiles do not leave perfectly concentric ringed tails (norway), and last i checked missiles do not form small white spheres of light that turn into blackholes. no matter what the filthy lying governments of the world say. and seeing as how its definitely an object, and its obviously flying, and if you dont beleive its a missile then you cant identify it. UNIDENTIFIED FLYING OBJECT.
- S4mur41dr4gon -- @r3never yep this is NEVER EVER a rocket, but i think it could be a wormhole caused by a breech in the space-time continuum according to einstein such a thing can happen if the balance between the dimensional values is disturbed by a cosmic energy blast even if its in a far galaxy i kno this sounds stupid and uber scifi but it could be the source of this phenomena due to a plausible astrophysical theory ^^
- takeme over11 == @myvideoshared seriously... they cant all be rockets, thats just the dumbest thing ever its not a UFO or a rocket its something outa the ordinary though, most convincing one for me is a black hole sucking the energy from the sun

More 'no way a rocket' YOUTUBE comments

- [Iluvj00](#) -- @Moderndaycity you have to be naive to think an exploding rocket will create a moving spiral, static in the air, stay there for minutes and not be affected by gravity, you have to wake the f*ck up, I'm not saying its an ufo but a rocket it is not. Wormhole? I don't know but an exploding rocket is the most stupid thing I've ever listen, due to the fact that we have had rockets exploding in the air since the beginning of the cold war. Wake up sheeple.
- [Firehandfingerspark1](#) -- missile?... no way! shooting star?... come on!.... there are a few dozen of these vids floating around, and they come from all over the world. Do you guys really think the Russians are able to launch or fire rockets wherever they please? NO they are not. This is strange, could be some type of super sonic craft slowing down... I can't explain
- [Nathan Smith](#) -- Are you kidding?! I've never seen a Russian missile, that glowed white, had three translucent tails about a mile long, and spiraled, leaving a tail of light. You sir, are ridiculous.
- [Zernestro](#) -- it does not resemble a rocket of any kind, at least from what i've seen and am capable of imagining. i just can't project the rockets size, speed and anything relative to the, erm, "still" ground dow thereXD It "looks" like a trick or "treat":P
- [Jpan4](#) -- If you say its a missel kill yourself. U r a idiot with out eyes.

MORE

- [MrJacksonBollock](#) -- That's some pretty crazy nonsense. Rocket launches don't leave that kind of trail in the sky. It's nowhere near any known rocket testing facility. So, not a rocket. Wormhole? Might be, although opening up a wormhole in the direct vicinity of Earth I imagine would have all types of crazy consequences. And before any of the "adults" rubbish the existence of wormholes, read some books. This type of ignorance is forgivable in a child, but in an adult...
- [Dizzy Lizzie](#) -- When rockets spiral out of control, they're OUT OF CONTROL! They go everywhere, not in perfect, tight little spirals like this one & the one that's just occurred over Norway. No way do I believe these are rockets. The governments of this world need to stop treating us all like naive infants
- [Phoenix743](#) -- It's not a damn rocket!!! The odds of a rocket causing an exact spiraling fluorescent effect is slim to none. Use your common sense..
- [drk tmplar](#) -- I saw this in Lijiang, Yunnan, China in 2006. Exactly like this. If it is a UFO + Wormhole, it's more likely a Wormhole entry because the UFO with the tail comes first, and the spiral comes second.
- [Pmrufo](#) -- it's not a missile or rocket or else it would explode and you would see bright yellow flame

SOLUTION STEP 1 – determine date/time

- GOAL: Find identical video in a dated Russian online periodical
- Youtube/rutube videos rarely include such basic info
- Without it, coordination with prosaic stimuli next to impossible
- This is often a ‘feature’, not a ‘bug’, of such postings
- Fortunately, Russia has excellent news items search engines
- Specification of precise narrow search window is very useful
- BUT -- Many video links disappear after only a few years
- This can also be a problem with text more than ten years old

Two approaches – wide or narrow?

- Search entire year's news for **НЛО** [NLO, Russian for UFO].
- OR
- Shortcut by searching space launch catalogs for viable candidates and then narrow news archive searches to those intervals
- Only if no 'hits' appear is there need for full-year searching

Searching for candidate launch events

- For orbital launches, Jonathan's Space Report
- For sounding rockets, Encyclopedia Astronautica
- For visual observations, **Visual Satellite Observer's Home Page** [www.satobs.org]
- For others – narrow interval news search

Jonathan's Space Home Page



- On these pages, you can find extensive data on the history of space exploration organizations which have helped me. I issue an irregular (approximate historical record of the space age. (Speaking of pedantry, see [my spelli](#))
- I am interminably working on a book on the history of the space program
- [Jonathan's History of Spaceflight](#) (a few extracts)
- Some direct links to parts of the History of Spaceflight:
- [Statistics](#) (Updated 2013)
- [Master Orbital Launch Log](#) (Updated Jun 2014)
- [Master Satellite List](#) (Updated Jun 2014)
- [Occasional satellite list](#) (Updated Jun 2014)

<http://planet4589.org/space/space.html>

LAUNCHLOG

http://planet4589.org/space/log/launch.html

The master list of satellite orbital launches and launch attempts. At the time of writing, this is the most complete list available with accurate launch times: I've managed to track down launch times (to the minute) that were previously unavailable. There may be some errors in this list, if you spot any please let me know.

- Launch: The international designation. For failed launches, the designation is one I have assigned. Pad explosions during prelaunch preps have not been included.
- Launch Date: Launch date and time are given in Coordinated Universal Time. A ? indicates an approximate launch time good to about 15 min.
- COSPAR International designation of the payload piece.
- PL Name Name of the payload as given by the launching agency after launch.
- Orig PL Name Manufacturer's payload name prior to launch. For USSR payloads, assignment of payload types to Kosmos satellites is in many cases slightly speculative - e.g. particular class of Zenit spy satellite for a specific Kosmos satellite may be often a guess.
- LV Type Launch vehicle type. Some of the USSR vehicles are still uncertain, particularly the assignment of Voskhod 11A57 versus Soyuz-U 11A511U in the mid 1970s.
- LV S/N Launch vehicle serial number if known
- Site Launch site, see sites.txt
- Orbit: is in perigee (km) x apogee (km) x inclination (deg to equator).
- Ref Reference for launch time, see refs.txt

- [The master list, text file \(LARGE\)](#)
- [Edited master list, omitting 'special cases'](#)
- [Index of launch sites](#)
- [Brief explanation of reference codes](#)

Dr. **Jonathan McDowell** is an astrophysicist at the Harvard-Smithsonian Center for Astrophysics. He is a staff member at the Chandra X-ray Center.



The JSR Launch Vehicle Database is an attempt to provide a complete listing of all types of space launch vehicle, both suborbital and orbital, and indicate relationships between them. ... I believe that this database is now as reliable a source for launch times, launch sites and vehicle types as any currently in existence. ... This database forms the background data for a comprehensive [launch list](#) of 69566 launches. The launches include 5563 orbital launch attempts, 27935 suborbital launches, and 36068 endoatmospheric flights

Produce 'list of usual suspects' such as this one, then check out their alibis to see if one fits.

Most Visited Getting Started Free Hotmail http://www.planet4589... Suggested Sites Expedition 46 Resource... Web Slice Gallery									
# Launch S/N	Launch Date (UTC) Site	COSPAR #	Suc	Ref	PL Name #	Orig PL Name #	SATCAT #	LV Type #	LV
1957 ALP M1-PS	1957 Oct 4 1928:34 NIIP-5 LC1	1957 ALP 2	S		1-y ISZ Energiya	PS-1	S00002	Sputnik 8K71PS	
1957-U01 88	1957 Oct 17 0505 HADC A	1957-U01 S			USAF 88 Charge A EngSci1.58	Poulter Pellet	A08258	Aerobee	
1957 BET M1-2PS	1957 Nov 3 0230:42 NIIP-5 LC1	1957 BET 1	S		2-y ISZ Grahn-WWW	PS-2	S00003	Sputnik 8K71PS	
1957-F01 TV-3	1957 Dec 6 1644:35 CC LC18A	1957-F01 F			Vanguard Vang-ER9948	Vanguard Test Satellite	F00002	Vanguard	
1958 ALP RS-29 UE	1958 Feb 1 0347:56 CC LC26A	1958 ALP S			Explorer 1 JunoFam	Explorer 1	S00004	Jupiter C	
535-14/88516	GIK-5 LC200/39	S			coop.krunichev.ru				
2006-033 (531)	2006 Aug 11 2215 CSG ELA3	2006-033A S			JCSAT 3A Wire	JCSAT 10	S29272	Ariane 5ECA	
2006-034	2006 Aug 22 0327:01	2006-033B S			Syracuse 3B	Syracuse 3B	S29273		
SL-23L ODYSSEY, KLA		2006-034A S			Mugunghwa 5 NK0610-27	Koreasat 5	S29349	Zenit-3SL	
2006-035 Y16 (90)	2006 Sep 9 0700:04 JQ Pad 603	2006-035A S			Shi Jian 8 AeChina2008-5	shijian bahao yuzhong wei	S29385	Chang Zheng 2C	
2006-036 STS-115	2006 Sep 9 1514:55 KSC LC39B	2006-036A S			Atlantis (STS-115) Wire	OV-104	S29391	Space Shuttle	
2006-037 H-IIA-10	2006 Sep 11 0435 TNSC Y	2006-036 S			ITS P3	ISS P3 ITS	A07058		
2006-038 Y18 (91)	2006 Sep 12 1602 HSC L38	2006-036 S			ITS P4	ISS P4 ITS	A07059		
2006-039	2006 Sep 14 1341:00	2006-037A S			JSE kougaku-2 gouki	IGS Optical-2	S29393	H-IIA 202	
-490 088 GIK-5 LC31		2006-038A S			Zhongxing 22A	Feng Huo 2?	S29398	Chang Zheng 3A	
		2006-039A S			Kosmos-2423	Don	S29402	Soyuz-U-PVB	78041
		2006-039 S			NK0611-37				
		2006-039			Spuskaemaya Kapsula	SpK-1	A07116		
		2006-039			Spuskaemaya Kapsula	SpK-2	A07119		
		2006-039			Spuskaemaya Kapsula	SpK-3	A07125		
		2006-039			Spuskaemaya Kapsula	SpK-4	A07127		
		2006-039			Spuskaemaya Kapsula	SpK-5	A07128		
		2006-039			Spuskaemaya Kapsula	SpK-6	A07129		

KOSMOS-2423
"Don" reccesat
2006 SEP 14
1341 GMT
LC31 [BAYKONUR]
INCLINATION 64.9°
Orbit 175 – 340 km

After dark, how HIGH above you does something have to be, to be in sunlight and hence be illuminated?

- Simple trigonometric solution – solar depression angle
 - Complicated by angular diameter of the sun [0.52 deg]
 - Further complicated by refraction of sunlight in air on horizon [lowers the apparent line-of-sight about 0.6 degrees]
 - Further complicated by clarity/cloudiness of that slice of air
-
- Solar illumination can be THE critical condition in determining validity of rocket solution to anomalous ground observations



Sun

Year Month Day Time

Daily events for 14 September

Event	Time	Altitude	Azimuth
Civil twilight begins:	00:10	-6.0°	74°
Sunrise:	00:49	-0.8°	82°
Maximum altitude:	07:16	36.7°	180°
Sunset:	13:43	-0.8°	277°
Civil twilight ends:	14:21	-6.0°	285°
Nautical twilight ends:	15:08	-12.0°	296°
Astronomical twilight ends:	15:59	-18.0°	307°
Minimum altitude:	19:16	-30.0°	360°
Astronomical twilight begins:	22:34	-18.0°	53°
Nautical twilight begins:	23:25	-12.0°	65°

Determine precise solar illumination conditions at point of observation to assess local sky darkness and altitude of shadowed volume overhead [for feasible plume visibility]

Position at selected time

SOLAR DEPRESSION ANGLE

Altitude	-2.0°
Azimuth	279.1°
Right ascension	11 ^h 28 ^m 42 ^s
Declination	3° 22' 43"
Range (AU)	1.0058829
Constellation	Leo

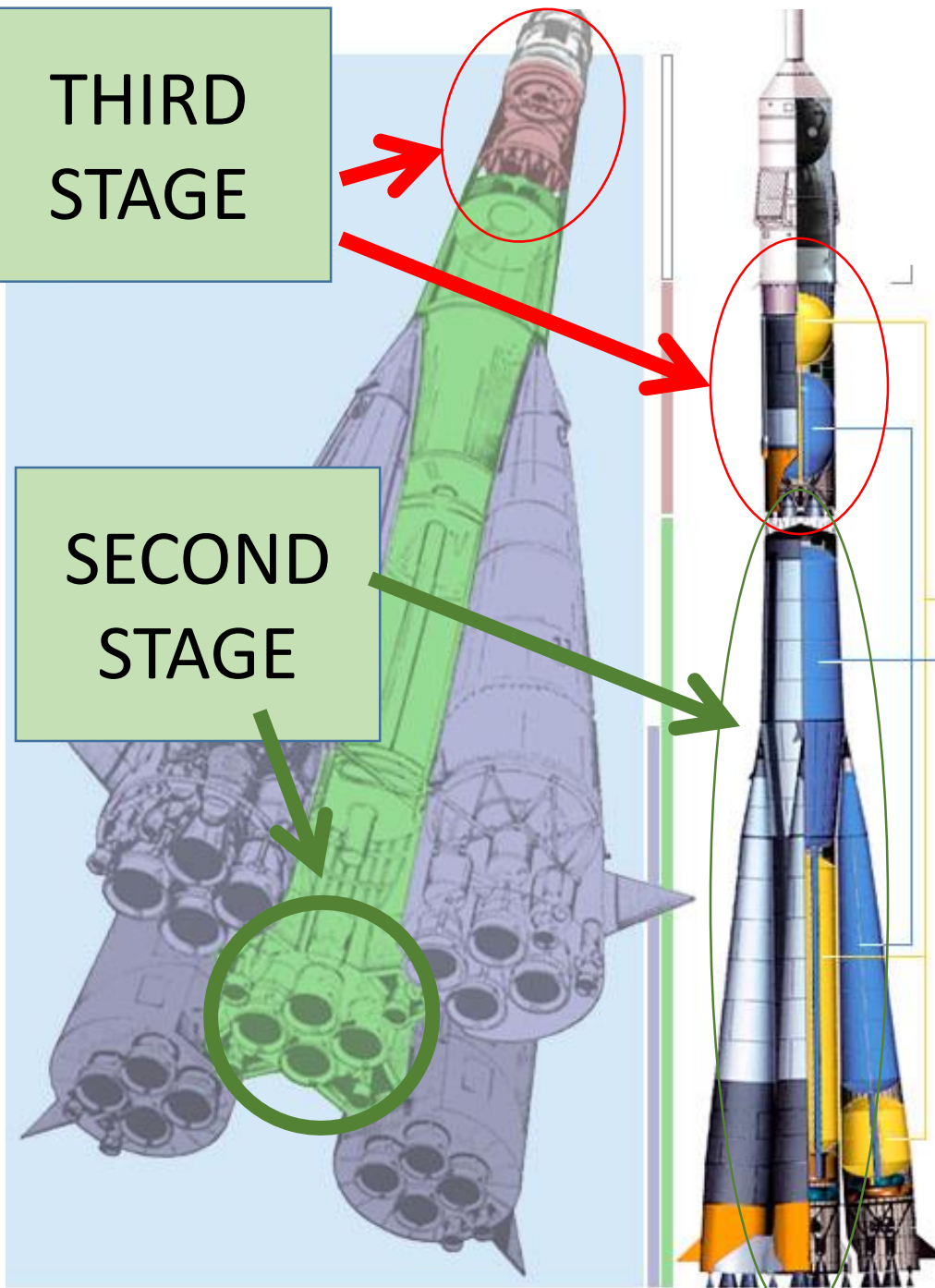
www.heavens-above.com

verdict

- Unmanned 'Soyuz' booster launch carrying Kosmos-2423 reccesat from Baykonur September 14, 2006, at 13:41 GMT, passed over Tomsk ten minutes later [56.50° N, 84.99° E, NE of Novosibirsk]. Local sunset was 13:42 [8:42 PM], news accounts placed sighting at "about 8:45". Widely reported in the national news media the following day as a UFO despite timely official notice of launch. Most UFO website reports omitted mention of launch date/time [a single little-noticed youtube posting the following year DID specify the date].

THIRD
STAGE

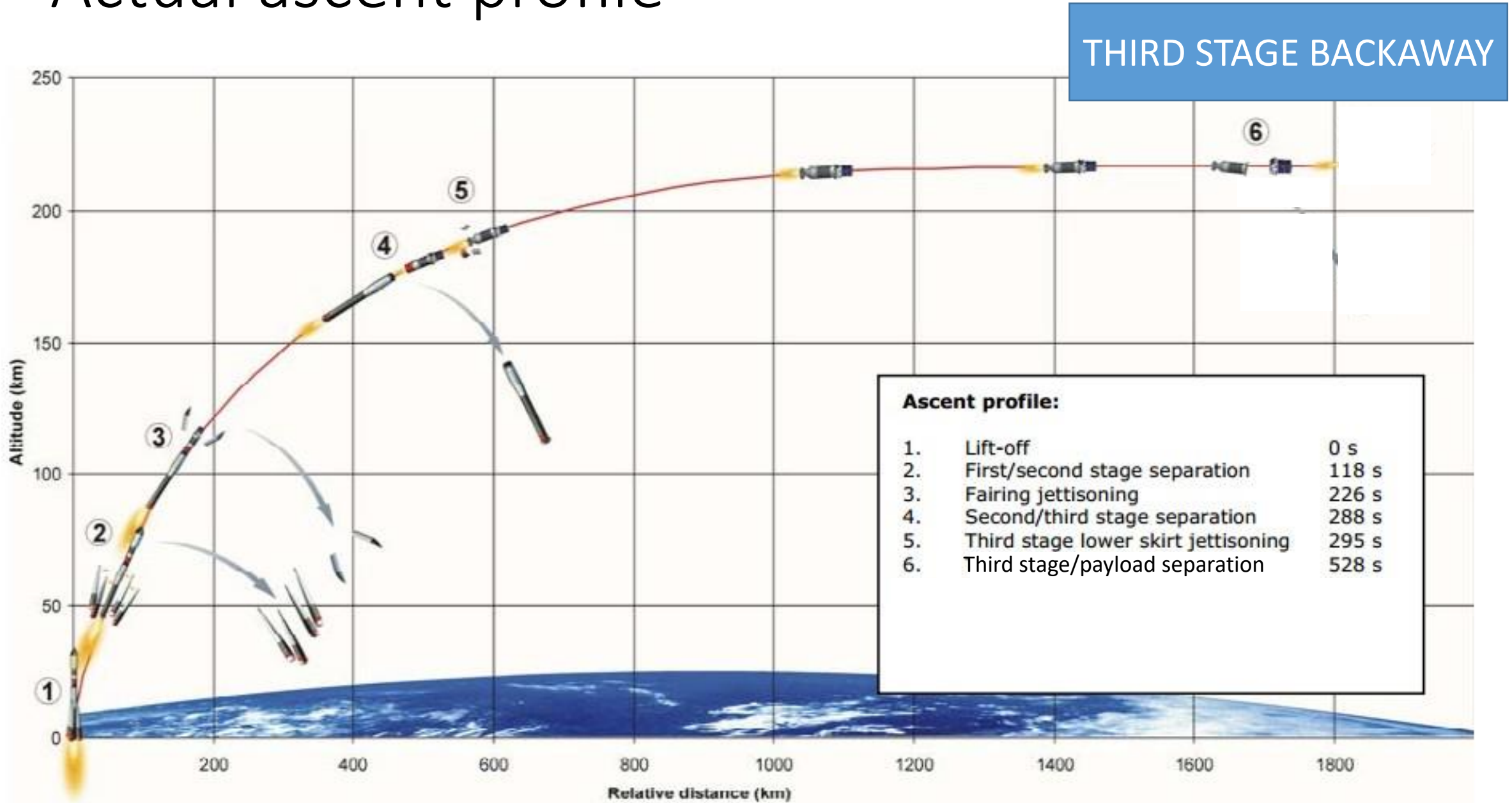
SECOND
STAGE



What did they see
over Tomsk?
4 engines of stage-2, 3



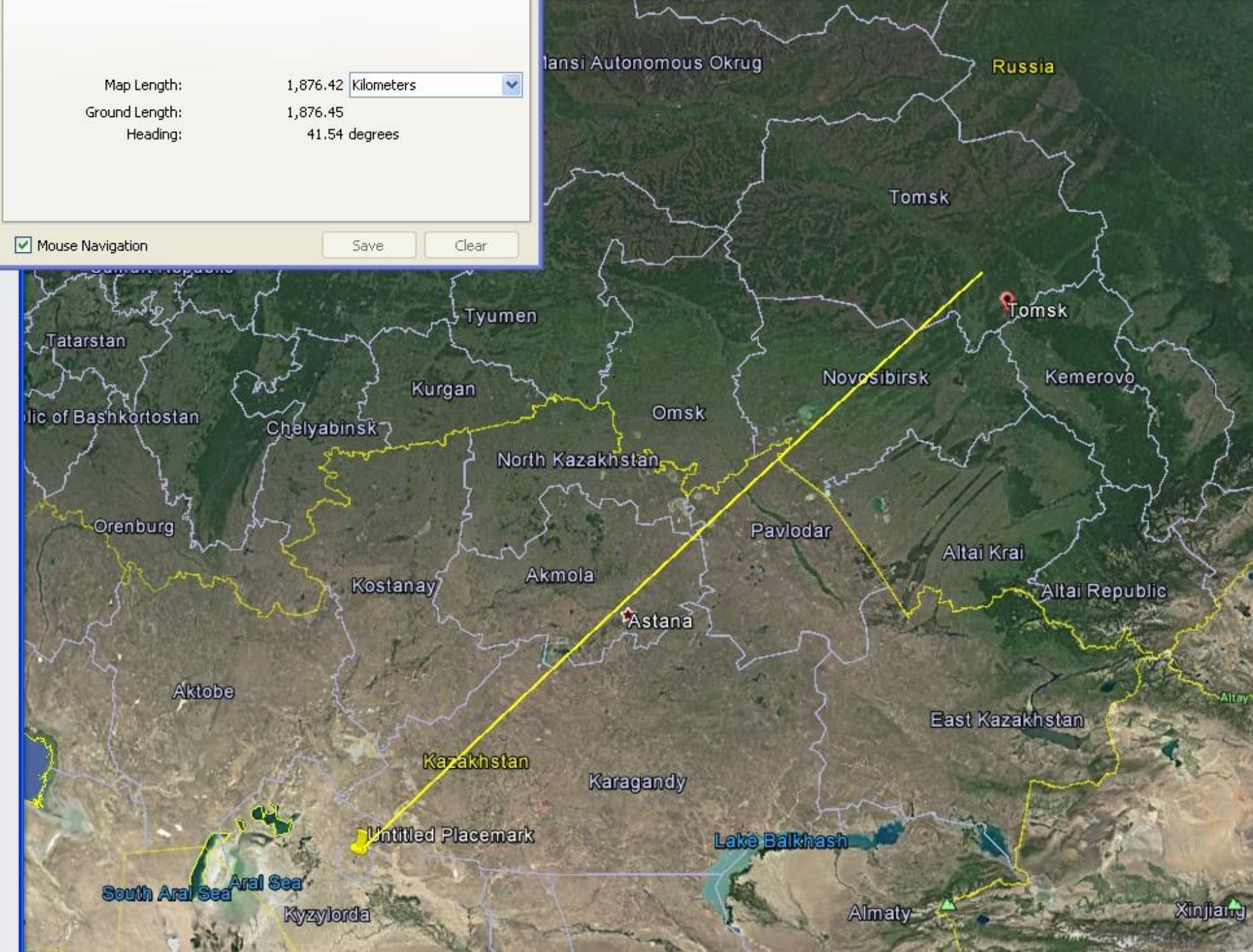
Actual ascent profile



Map Length: 1,876.42 Kilometers
Ground Length: 1,876.45
Heading: 41.54 degrees

☒ Mouse Navigation

Save Clear



Google-Earth gives distance of Baykonur to Tomsk = 1876 km, & third stage separation starts at 1750 km at altitude 215 km and velocity of 8 km/sec.

Do the math

- At third stage shutdown, altitude is 215 km, velocity is 8 km/sec
- At overhead point, this is 2.1 deg/sec from observer's viewpoint
- Elevation angle estimate from video using visible structures could be 30 to 45 degrees
- Range to object then could be 300 km or more
- Actual angle rate then could be 1.5 deg/sec or slightly less at closest point, substantially less at greater distances due to perspective
- Imagining observed motion from video, object seems to have traversed roughly 40 degrees of sky in 30 seconds [1.3 deg/sec].
- Considering roughness of such estimates, all that can be said is that video is NOT INCONSISTENT with satellite launch hypothesis

WHAT EXACTLY CAUSED THE TOMSK 'SPIRAL'?

- The launching of a space booster from Russia's "Baikonur Cosmodrome" in Kazakhstan on a routine military reconnaissance satellite mission.
- By random chance, illumination and meteorological conditions were conducive to ground observation of sunlit booster plumes.
- Third stage shutdown and payload-avoidance fuel dump occurred at standard time, by chance just prior to passing north of Tomsk, Siberia.
- Alert camcorder owner tracked final seconds of thrusting followed by best-ever [so far] video of 'comma cloud' effect of fuel dump, just prior to apparition passing behind tall building.
- Estimated angular rate and direction is consistent with observed rate in video
- Independently-produced CGI simulations of third stage fuel dump cloud dynamics produce astonishingly concordant images of actual scene.
- Proliferation of personal video recorders has recently produced other similar videos of exactly the same event on identical booster launches.

MEMORY OF SEEING ROCKET ASCENTS AS VIEWED FROM LAUNCH SITE
LEADS MOST OBSERVERS TO THINK THIS IS A ROCKET STILL CLIMBING AWAY
FROM THEM -- WHEN IT IS ACTUALLY A CONSTANT ALTITUDE ROCKET
HEADING TOWARDS THEM. THE TRANSLUCENT PLUME LOOKS INSIDE OUT.



In the absence of usable size/distance visual cues, witnesses [and video viewers] may interpret Tomsk plume/spiral as if it were a climbing, departing booster [left] rather than the unseen reality, an approaching pluming vehicle in level flight [right]

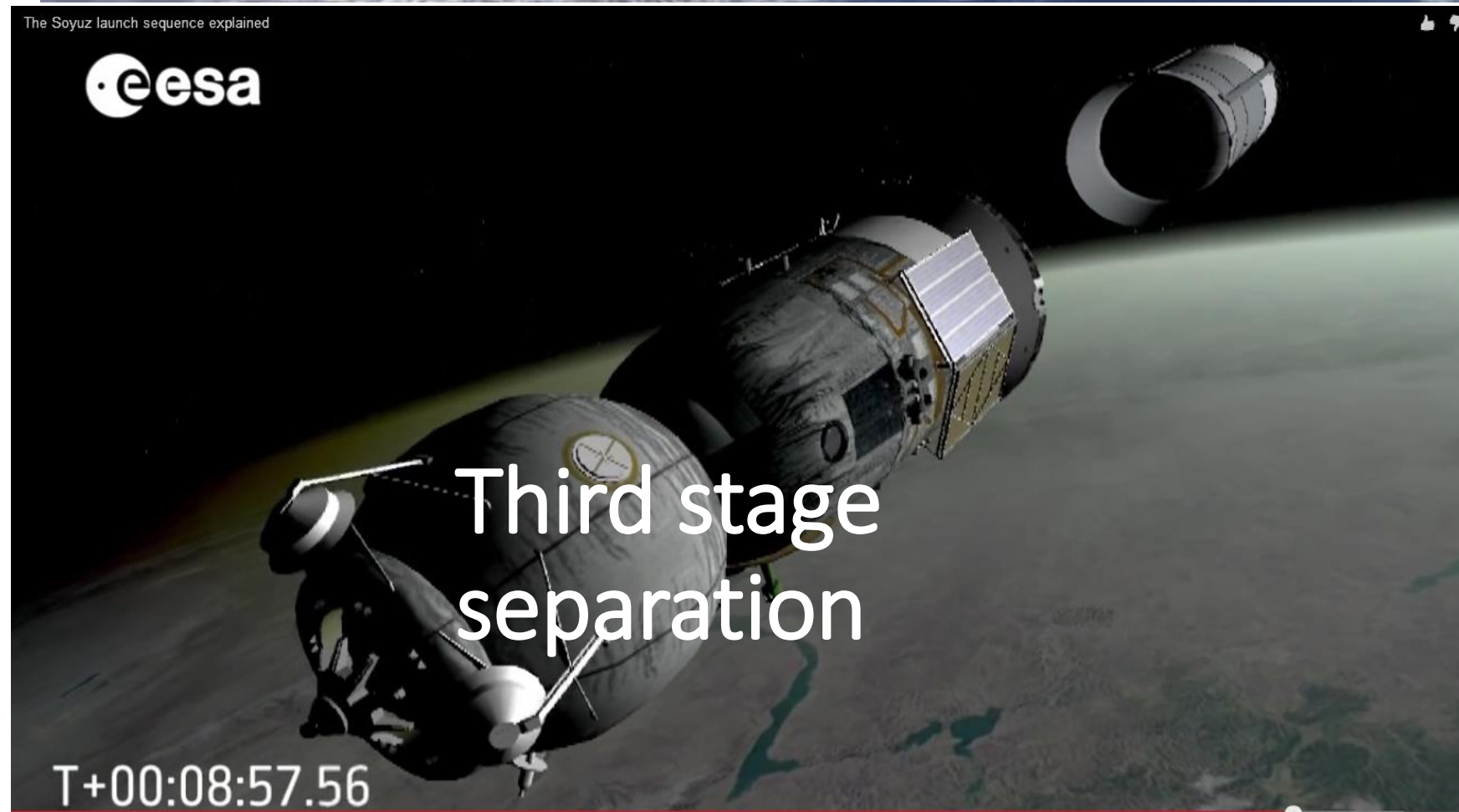
SPACE SHUTTLE LIFTOFF & PITCHOVER

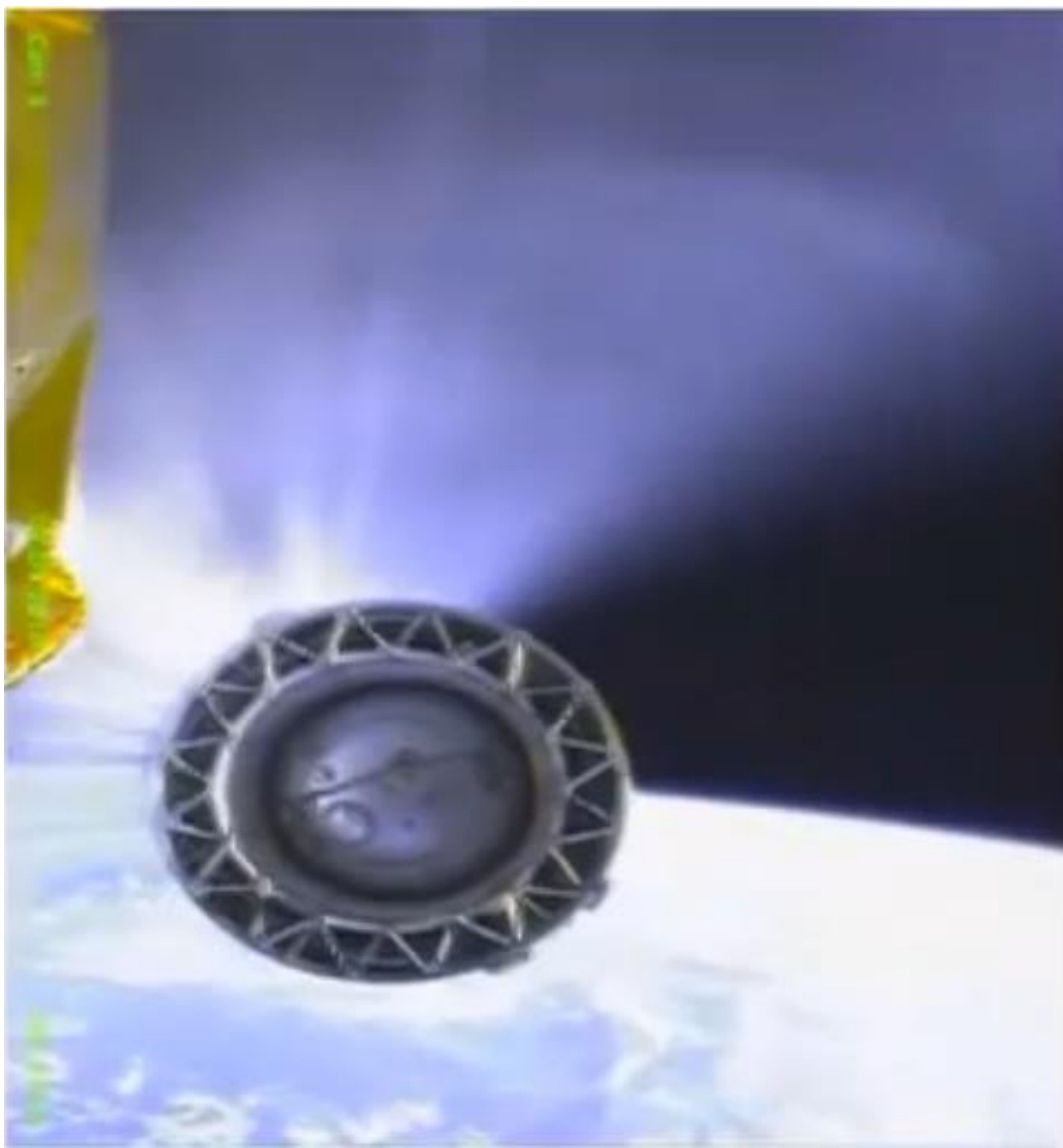


HIGH ALTITUDE AIRLINER IN CRUISE PHASE



**WHAT WAS REALLY
GOING ON IN SPACE
AS THIRD STAGE CUT
OFF AND PAYLOAD
SEPARATED -- STAGE
PREPARED TO BEGIN
SEPARATION THRUST
TO AVOID CONTACT
WITH SATELLITE**





Departing 3rd
stage sep
gentle thrust
[rocketcam
view from
payload]
VS07 [ESA]
Kourou
Apr 3, 2014

CGI of plume appearance IN SUNLIGHT

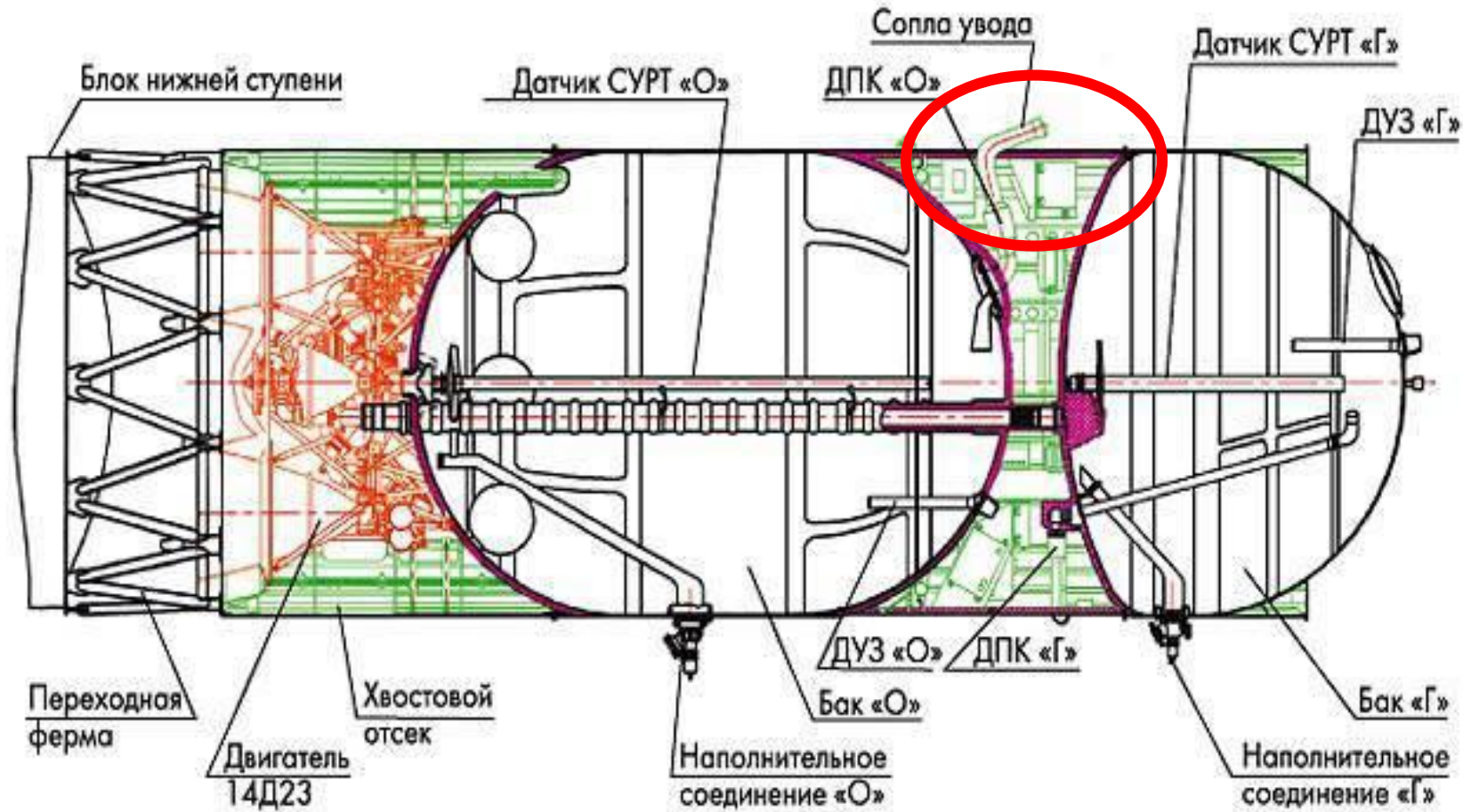
YOUTUBE: "Soyuz Launch Sequence Explained"



Animation of Soyuz propellant venting for post third-stage shutdown, nicely showing accurate plume orientation before stage tumble begins [image is somewhat overbrightened for clarity]

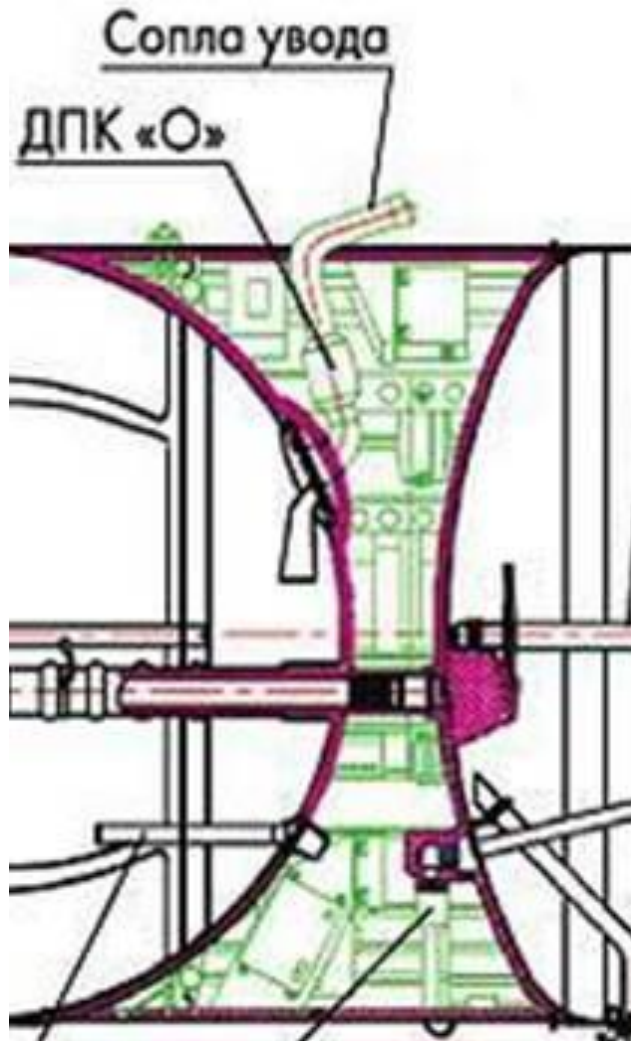
<https://www.youtube.com/watch?v=W-lgeyzd25M>

Third stage -- Oxygen vent line



<http://www.pvsm.ru/images/nezametnye-slojnosti-raketnoi-tehniki-chast-4-eshyo-pro-dvigateli-i-baki-16.jpg>

Schematic zoom – photograph of valve



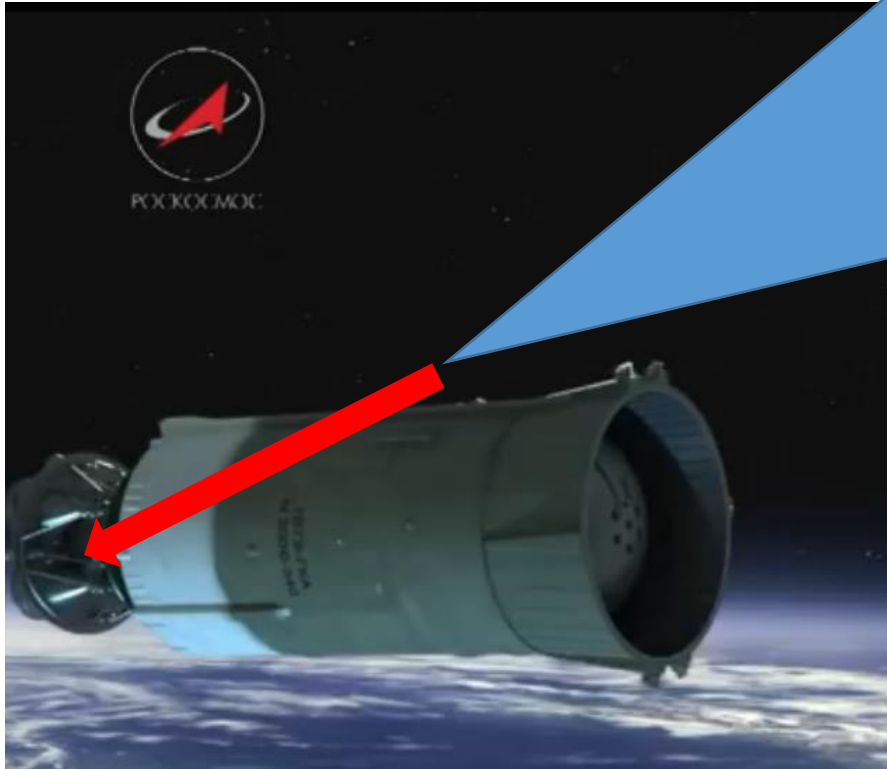
Сопла увода
[dump nozzle]

View of vent during booster rollout



<http://spaceflight.nasa.gov/gallery/images/station/crew-27/hires/201104020008hq.jpg>

Orientation of thrust vector
approximately through
empty third stage's
center of mass



CGI animation of venting for “Orbiter 2010” game

[<https://www.youtube.com/watch?v=f4hVNNYyFws>]

Anton Sergeyev [Антон Сергеев]

Uploaded on Dec 22, 2011

https://www.youtube.com/watch?v=ya_xTsseCxc&feature=youtu.be

02:28



Extremely realistic prop venting & stage tumble



Dump duration 15 seconds!
[third stage does two full tumbles]



https://youtu.be/ya_xTsseCxc



“COMMA CLOUD” IS A STANDARD FEATURE OF SOYUZ LAUNCHES SEEN AT TWILIGHT



Soyuz-TMA-M (Baykonur, 2015) [left, right] ISS view, Novokuznetsk
Soyuz-GLONASS (Plesetsk, 2013) [left, right] ISS view, Omsk view
Soyuz 2015 Kazakhstan [below]



Soyuz TMA-19M 2015/12/15
Photos by crewman Scott Kelly

ISS046e001427

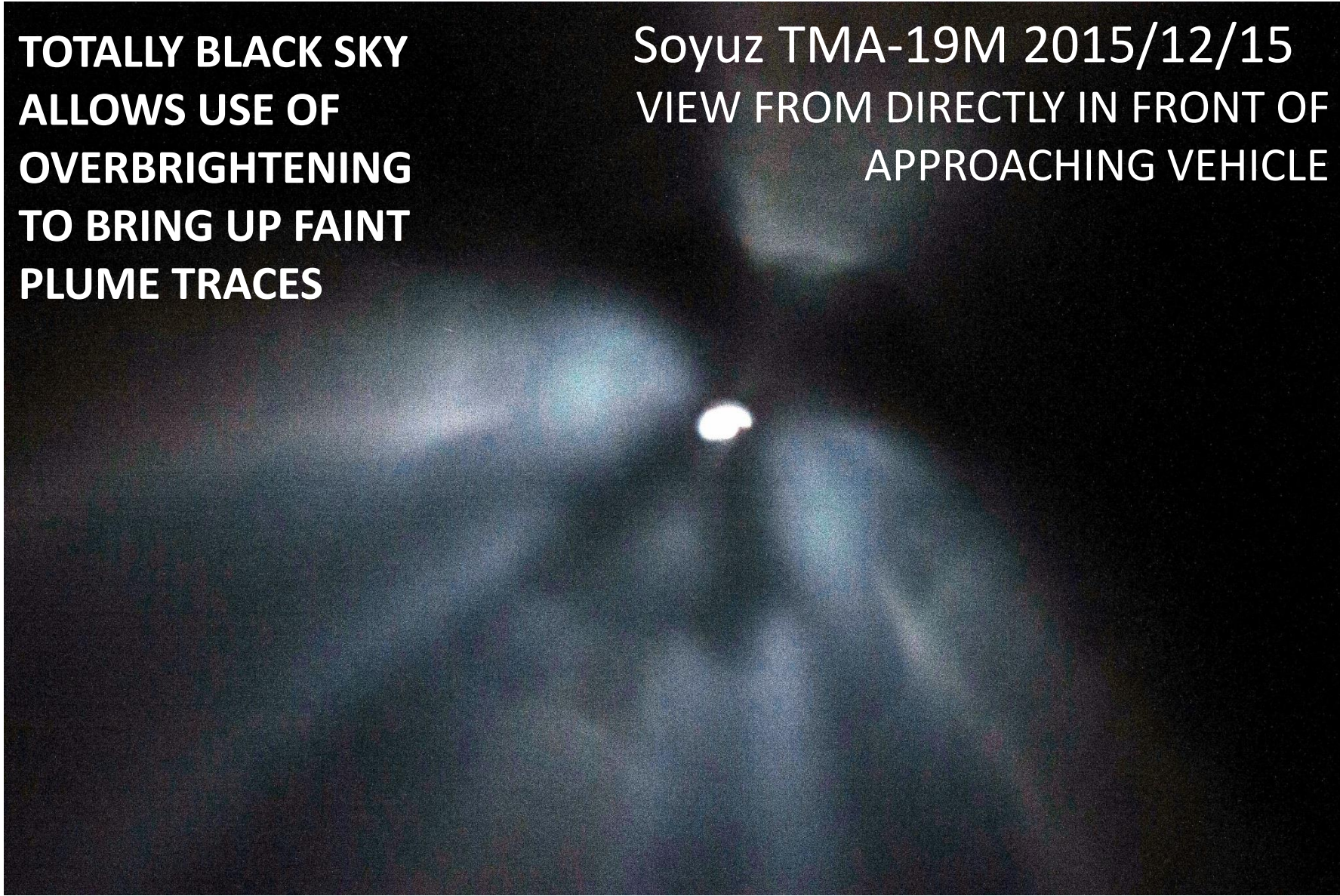
**SOYUZ IS 3100 KM BEHIND ISS
OVERTAKING AT 0.3 KM/SEC**



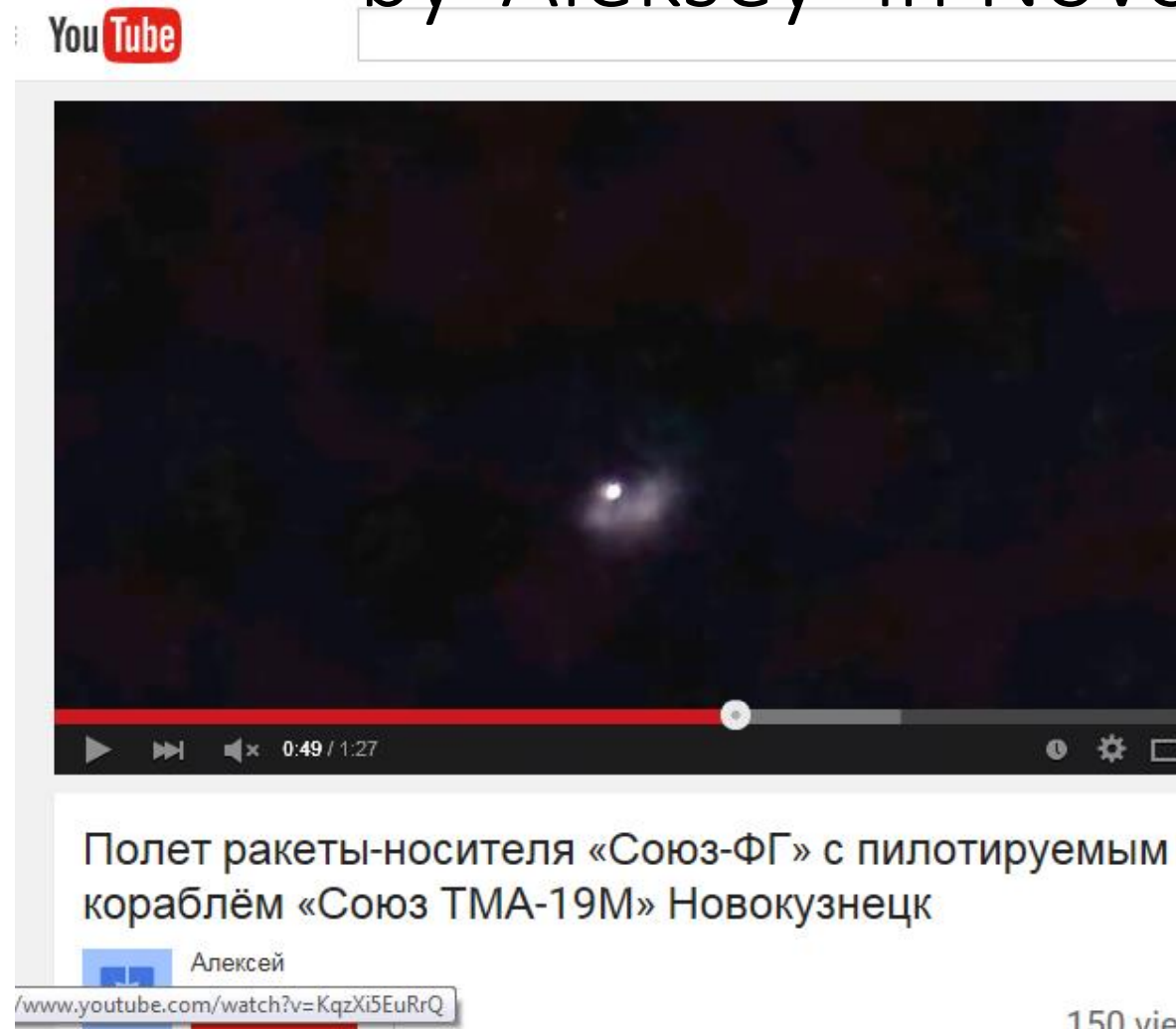
Photo iss046e001427 11:12:07 bright

**TOTALLY BLACK SKY
ALLOWS USE OF
OVERBRIGHTENING
TO BRING UP FAINT
PLUME TRACES**

Soyuz TMA-19M 2015/12/15
VIEW FROM DIRECTLY IN FRONT OF
APPROACHING VEHICLE



Soyuz TMA-19M ALSO observed by 'Aleksey' in Novokuznetsk



Stabilized zoomed view of 3rd stage cutoff followed by 'comma cloud' formation and dissipation – **BEST!!**



<https://www.youtube.com/watch?v=DKW0bzYTNTw>

**“STANISLAV”
RECORDED
IT ALSO
NEARBY**

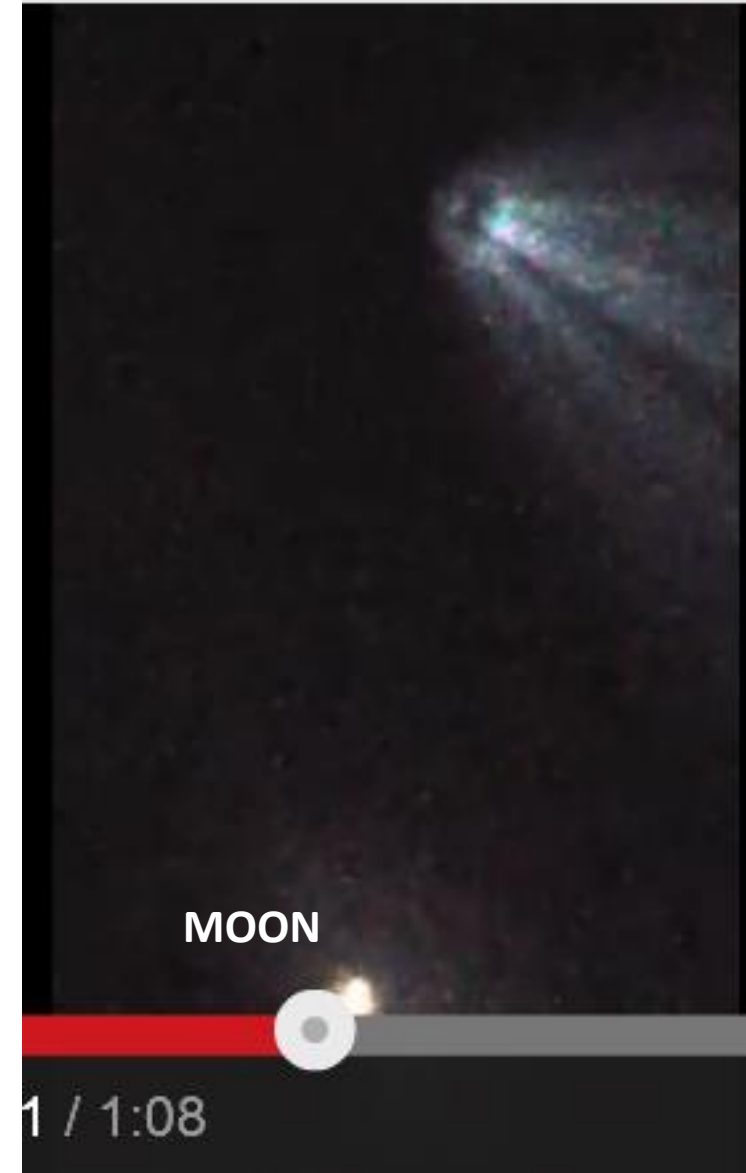
Полёт ракеты в небе над Новокузнецком Точирино
Flight of a rocket in the sky over Novokuznetsk-Tochilino
Novokuznetsk – 2nd video same angle on moon --

Five seconds between stage shutdown and flare.
Stable medium zoom tracking
Dec 15, 2015



[Станислав я](https://www.youtube.com/watch?v=gg4sR-R99u0)

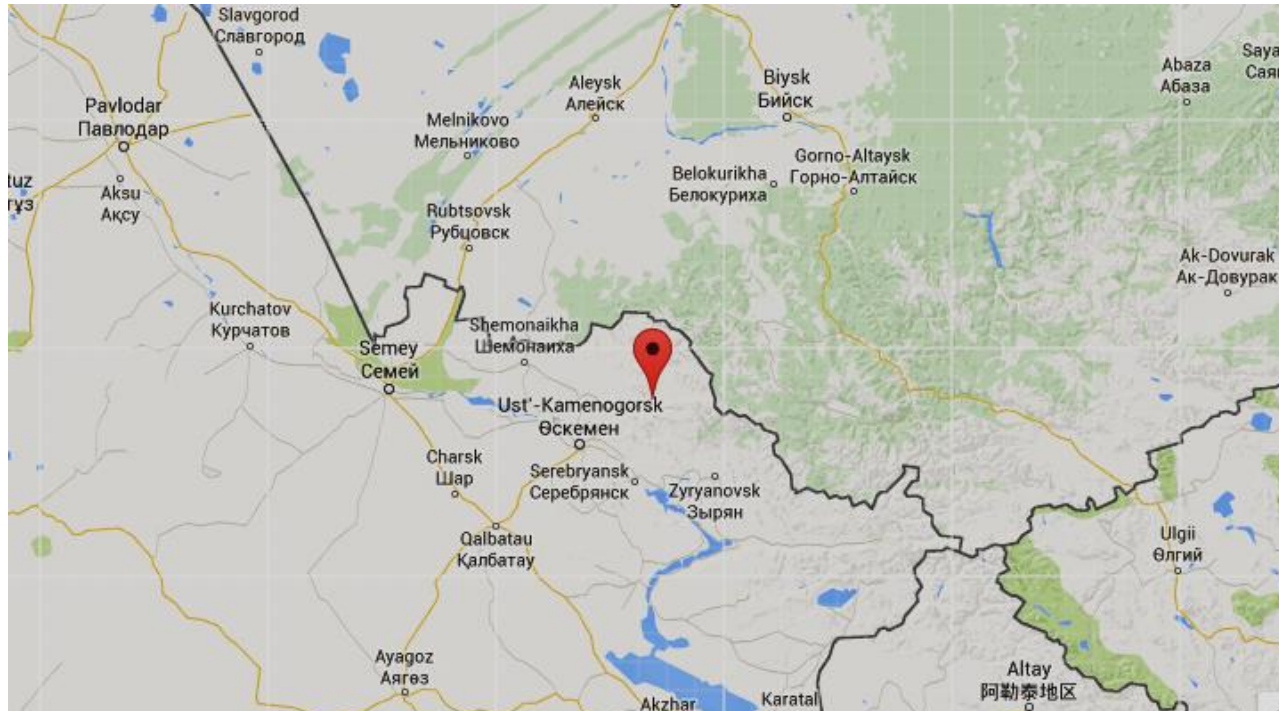
<https://www.youtube.com/watch?v=gg4sR-R99u0>



**AND
YURIY
TOO!**

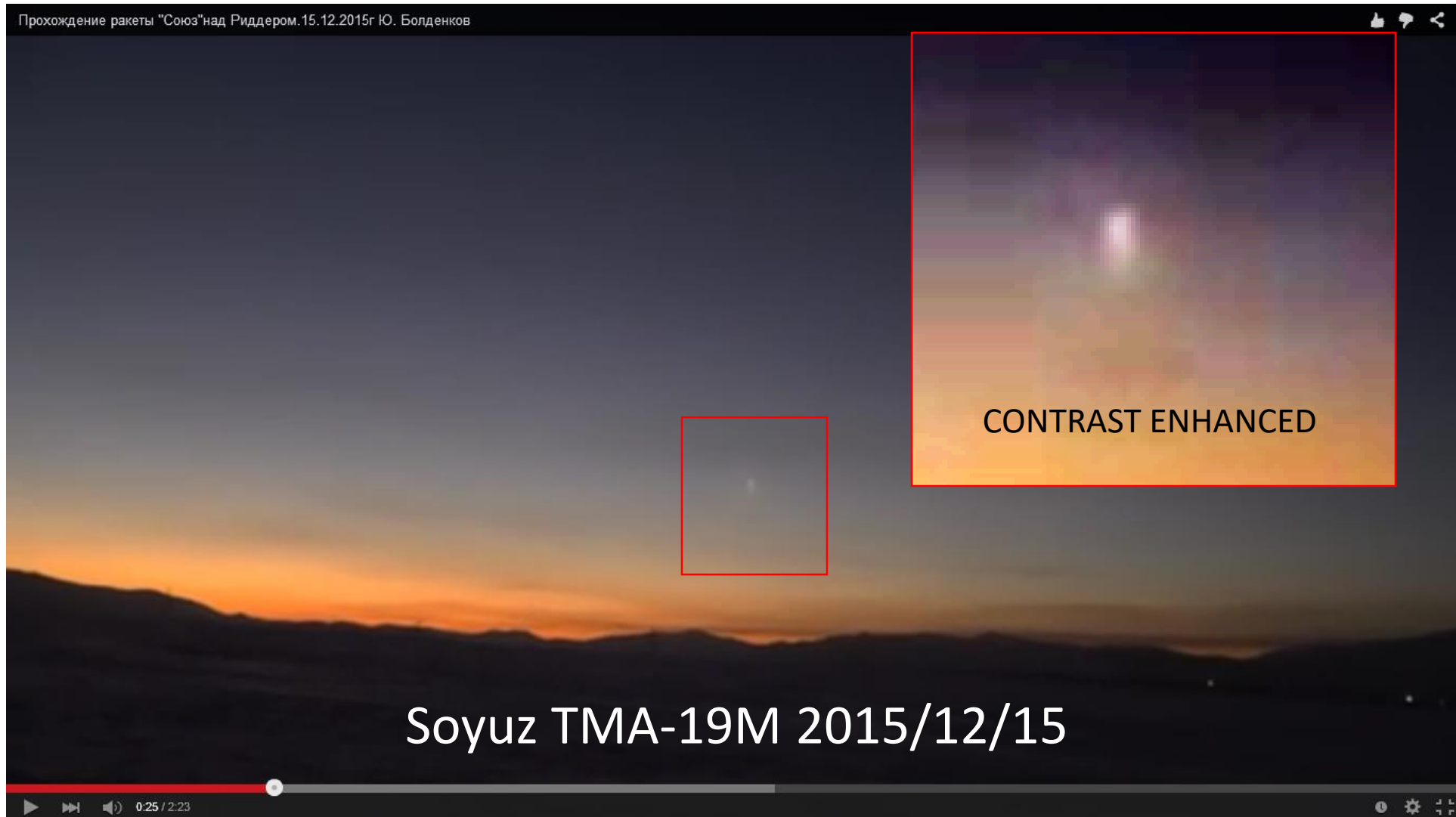
Soyuz TMA-19M seen from Ridder, Kazakhstan

- Прохождение ракеты "Союз" над Риддером.15.12.2015г
- Юрий Болденков [Yuriy Boldenkov]
- <https://www.youtube.com/watch?v=TI6lWwFWcQ8>

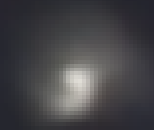


Located in far northeast
corner of Kazakhstan
near Russian Chinese,
and Mongolian borders


Soyuz rises into sight [photographer was clearly waiting for it and knew where to look]



Passing directly overhead,
3rd stage shutdown
and plume drops behind

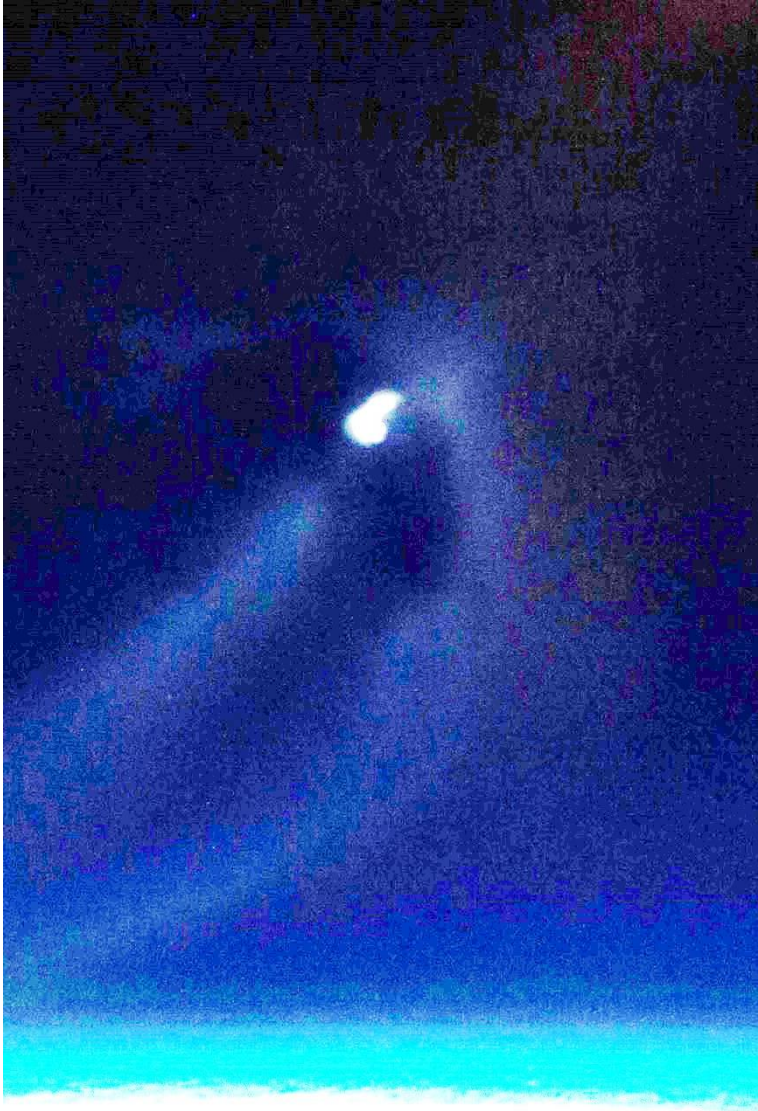


**Post-separation
“comma cloud”**



Soyuz TMA-19M 2015/12/15

**BY CHANCE,
ASTRONAUT
ALEXANDER
GERST [ESA]
ON THE ISS
RECORDED
A SIMILAR
SOYUZ LAUNCH
AND COMMA
CLOUD IN 2014**



Over-brightening shows traces of
former plume dispersal



#24 1/160 2014:06:14 17:26:36

Identical
“comma”
flare imaged
from ISS on
earlier [Gerst]
accidental
observation of
Soyuz booster
navsat launch
from Plesetsk
[2014 june 15]

2014 June 15 Plesetsk Soyuz GROUND view

Seconds
later

This shows a **VERY** complex sequence of plume dynamics. It overlaps much of the Gerst still sequence from aboard the ISS. When compared to the Kelly sequence on 2015 Dec 15 it provides even **MORE** insight into plume.

Омск, 15 06 2014, нло над чкаловском



smeduck bucks



3

Like

About

Share

Add to

...

...

Published on Jun 14, 2014

В Омске, над Чкаловским поселком быстро двигался по небу непонятный объект. Летел по прямой траектории, с большой

<https://www.youtube.com/watch?v=wfPXJliQCU0>

UFO нло. Новосибирск 28.01.2011. ufo (analyse)

AND ANOTHER ONE!

UFO нло. Новосибирск
UFO OVER NOVOSIBIRSK
28.01.2011. ufo (analyse)
'Redstagn' 7,697 views



0:58 / 1:17

<https://www.youtube.com/watch?v=phTtgSn8qL8>



Jan 28, 2011 = Progress M-09M from Baykonur
2011-004 2011 Jan 28 0131:39 2011-004A

Sputnik Казахстан // 29.01.11 в 03:13

НЛО в небе над Астаной могло быть ракетой «Союз» - Мусабаев

Глава Национального космического агентства Казахстана, космонавт Талгат Мусабаев считает, что неопознанный летающий объект, который зафиксировали очевидцы в Астане и ряде регионов Казахстана в...

НЛО над Омском взбудоражило весь город [ФОТО]

Странное явление над Омском наблюдали сегодня десятки омичей, проживающих в различных районах города. Как выяснилось, шокированы были даже работники Омского аэропорта.

http://www.omskinform.ru/news_one.php?oid=35805

Redstagm's 28.01.2011 video comments

- Карчувальник == да они ещё в сетке рабице и много выхлопных труб, бесшумные и соляркой заправляются. У нас на севере кропоткина слева база Yes they are in grid rabice and lots of exhaust pipes, quiet and fuel refuel. We in the North left Kropotkin base
- ЖУЛИК ЖУДКИЙ == оно потом пропало куда? в космос или дальше и летела по небу? по ходу это баллистическая ракета след её. смотрите испытание и пой мети это даже по ТВ показывали испытания не все конечно. но поймите
- Where did it then go? Into space or flew further across the sky? By its path this is a trail of a ballistic missile. see test and sing this matter, even on tv showed the tests not all of course. but understand
- shka > надо спросить у пользователя andriyxa1 или тут /watch? v=7kJkJ_yXsz0 RelLIKviA >> В Казахстане, а именно в Павлодаре сегодня в 7:35 можно было увидеть объект с длинными светящимися лучами. Kazakhstan, namely in Pavlodar today at 7:35 you can see an object with long luminous rays

SUMMARY

- Tomsk 'spiral' in 2006 was caused by a normal satellite launching
- Spectacular ["once in a lifetime"] appearance was due to random fortuitous lighting and weather conditions
- Growing availability of personal camcorders promise more videos
- Absence of basic contextual information [date/time] on popular videos made explanation difficult
- Widespread reposting of old videos often makes even location and year of event ambiguous
- Absence of basic motion descriptors [compass direction of sight, estimated angular elevation, rate] hindered assessment of proposed solutions
- Popular skepticism of correct explanation due mainly to gross misinformation of actual appearance of actual rocket activity
- Videos CAN provide amazing insights into details of missile and rocket activity around the world, especially where governments withhold info

FURTHER READING

- [http://www.thelivingmoon.com/49ufo_files/03files2/Rocket Launches Spirals in the Sky.html](http://www.thelivingmoon.com/49ufo_files/03files2/Rocket_Launches_Spirals_in_the_Sky.html)
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