

Sep 29, 2013
Ground observations
of Falcon-9 second stage
fuel dump over Madagascar
[to compare with
other events]



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March 20, 2018

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FINAL DRAFT

Sep 29, 2013 16:00 UTC

- SpaceX over southern Africa. Madagascar, and SW Indian Ocean
- First-ever SpaceX orbital launch from Vandenberg AFB
- First-ever second stage engine restart test -- failed

SIOPE

position

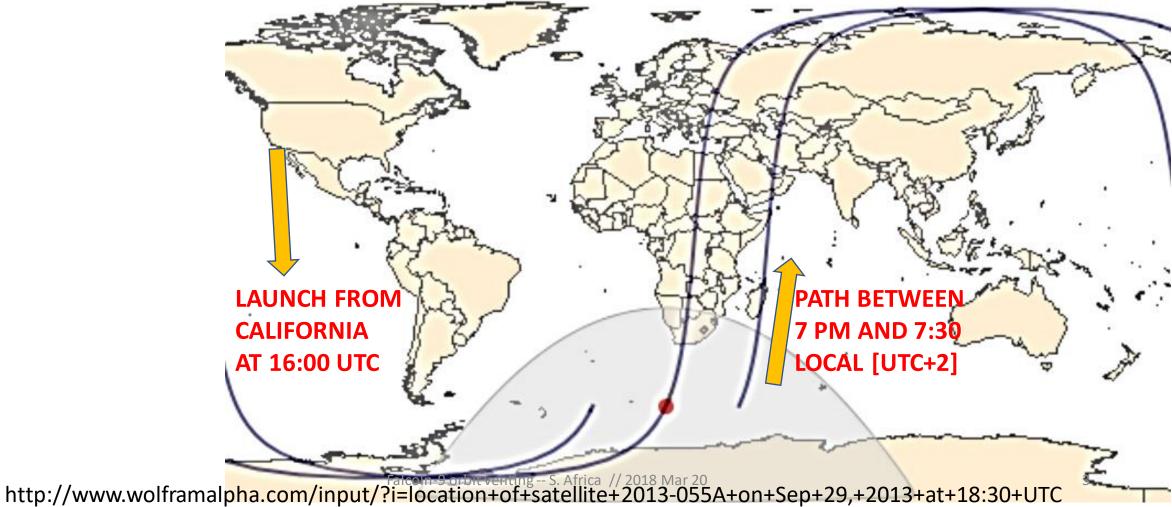
Sunday, September 29, 2013 at 6:30 pm UTC

GROUND TRACK OF CASSIOPE SATELLITE

Show DMS

Show 3D

Orthographic



cassiope

- Wikipedia
- SpaceX also ran a post-mission test on the second stage. While a number of
 the new capabilities were successfully tested on the September 29, 2013,
 CASSIOPE flight, there was an issue with the second stage restart test. The
 test to reignite the second stage Merlin 1D vacuum engine once the rocket
 had deployed its primary payload (CASSIOPE) and all of its nanosat
 secondary payloads was unsuccessful. The engine failed to restart while the
 second stage was coasting in low Earth orbit.
- The Falcon 9 upper stage used to launch CASSIOPE was left derelict in a decaying elliptical low Earth orbit that, as of January 20, 2016, had a perigee of 317 km (197 mi) and an apogee of 1,283 km (797 mi).

2013-055 2013 Sep 29 1600:13 2013-055A CASSIOPE http://planet4589.org/space/log/launchlog.txt

UFO over Indian Ocean? SpaceX Falcon 9 rocket sparks sightings

by ALAN BOYLE, SCIENCE EDITOR

Sep 30 2013, 2:47 pm ET

SpaceX's first-ever Falcon 9 launch from California gave a big boost to commercial spaceflight — but it also boosted our planet's store of UFO lore.

Reports about a fuzzy-looking unidentified flying object streamed in from observers in southern Africa and the Indian Ocean islands of Mauritius and Reunion. The sightings came about an hour after the Falcon 9 v1.1 rocket's launch from Vandenberg Air Force Base at 9 a.m. PT (noon ET) Sunday.

The Zimbabwe Mail marveled over the "strange moonlike object" seen from the country's Mashonaland region, as well as from Botswana, Malawi and South Africa. Mauritius' L'Express wondered whether it was a UFO, a satellite or a star cluster.

A retired astronomer from Cape Town, Greg Roberts, gave the correct explanation in an interview with The New Age, a South African publication: "It was propellant or rocket fuel" released by the Falcon 9 rocket's second stage.

After sending several satellites into a pole-to-pole orbit, the Falcon's second stage released its leftover fuel, which is standard procedure to avoid a blowup during its atmospheric re-entry.

"This release by chance coincided with sunset beneath that part of the orbit, as the booster and its deployed satellites flew from south to north directly over Madagascar, about 850 miles high," NBC **News space analyst James** Oberg explained in an email. Sunlight set the cloud of rocket fuel aglow.

Tip o' the Log to James Oberg

http://www.nbcnews.com/science/ufo-over-indian-ocean-spacex-falcon-9-rocket-sparks-sightings-4B11297922

WHY SHOW SO MANY DETAILED EYEWITNESS REPORTS?

- COLLECTING ALL AVAILABLE WITNESS REPORTS SERVES SEVERAL PURPOSES
- IF THEY SEEM TO BE TOO REPETITIVE OR UNINTERESTING, SKIP TO THE END OF THE SECTION
- BECAUSE THE APPARITION IS SO FAR BEYOND A WITNESS'S EVERYDAY EXPERIENCE BASE, THE DESCRIPTIONS MAY ONLY BE APPROXIMATE, AND ANALYSTS MUST APPRECIATE THE LIMITATION
- ANY POST-EVENT ATTEMPT TO CONDENSE OR EDIT DOWN THE VERBAL PASSAGES THREATENS
 TO UNINTENTIONALLY INTRODUCE THE BIASES AND EXPECTATIONS OF THE CHRONICLER
- WITHOUT PRESERVING THE FULL RANGE OF PERCEPTIONS AND INTERPRETATIONS, ANY
 FUTURE ATTEMPTS TO WALK-BACK NEW VISUAL REPORTS TO INTERPRET THE NATURE OF
 UNDOCUMENTED SPACE EVENTS WILL BE IMPEDED, IF NOT RENDERED TOTALLY UNACHIEVABLE
- RAPID THOROUGH COLLECTION OF ALL IMPRESSIONS IS CRITICAL TO AVOID IRRETRIEVABLE LOSS OF TEMPORARY STATEMENTS AND COMMENTS ACROSS THE INTERNET, ESPECIALLY AS THEY ARE USUALLY VERY POORLY KEYWORDED FOR ANY LATER SEARCH ENGINE APPLICATION
- IN MANY CASES, PSEUDONYMOUSLY POSTED COMMENTS CAN PROVIDE ACCESS TO ORIGINAL WITNESSES FOR FOLLOW-UP QUESTIONS BUT ONLY IF DONE PROMPTLY AND DIPLOMATICALLY

Use and misuse of analogies

- THE EYEWITNESS REPORTS OFTEN REFLECT THE STRUGGLE THAT STARTLED PEOPLE UNDERWENT TO FIND ANY EARTHSIDE TERMS OR ANALOGIES TO USE FOR A ONCE-IN-A-LIFETIME UNEARTHLY APPARITION
- "LOOKED LIKE" IS A COMMON PHRASE WITH REFERENCES TO MANY ORDINARY-LIFE OBJECTS == HEADLIGHTS, ZIG-ZAG CONTRAILS, SPIRAL TOYS OR CANDY, FIREWORKS, SPARKLERS, FRUITS AND VEGETABLES, PARACHUTES...
- COMPARING THE VISUAL STIMULUS TO PAST SIGHTINGS [WHICH IS THE NORMAL COGNITIVE PROCESS] OPENS THE POSSIBILITY THAT UNDER SUBSEQUENT LATER RECOLLECTION, EXTRANEOUS FEATURES OF THE COMPARED-TO MEMORIES CAN UNCONSCIOUSLY INSERT THEMSELVES SEAMLESSLY INTO THE NEW EXPERIENCE
- THIS MAKES IT ALL THE MORE IMPORTANT TO OBTAIN AND PROVIDE FULL VERBALIZATIONS FROM WITNESSES, UNPROMPTED AND UN-SUGGESTED
- QUICK FOLLOW-UP QUESTIONING NEEDS TO OBTAIN MANY USUALLY OMITTED DETAILS SUCH AS DIRECTION OF SIGHTING AND MOTION, ANGULAR SIZE AND SPEED [ONE FIST AT ARM'S LENGTH = TEN DEGREES], FLUCTUATIONS & TIMING
- IDEALLY, VERBAL DESCRIPTIONS SHOULD BE COLLECTED BEFORE SEEING IMAGES

MOST OF THESE EVENTS ARE SEEN AND REPORTED AS 'UFOs'

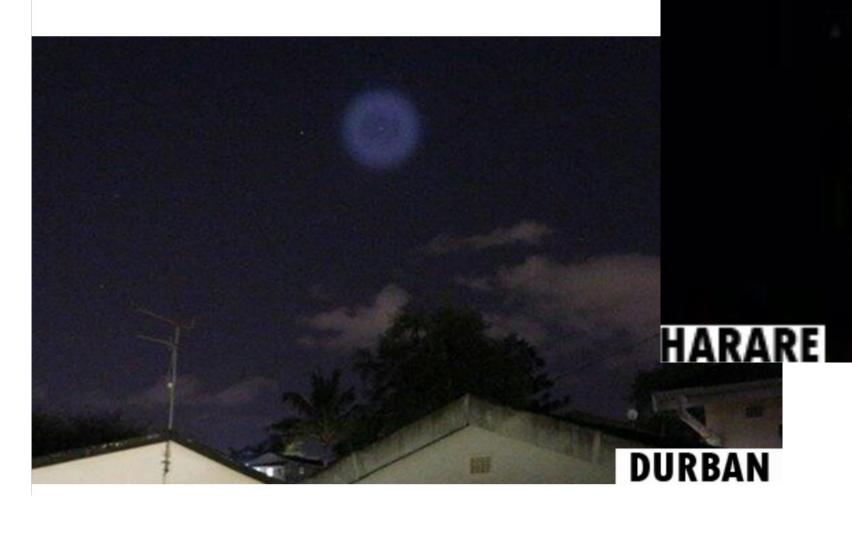
- Most primary witnesses did not recognize the apparition as a rocket launch manifestation
- For these witnesses, many descriptions included classic misperceptions of unusual objects at unknown distances in the sky, including speed, size, and course changes during the observation
- Sadly, most observers did not report potentially useful diagnostic data such as date/time, observer location, azimuth/elevation of object, time span and motion of object
- Many MORE commentators refused to accept the missile explanations – mainly based, when explained, on misinformation of realities of missile and space technology
- Nevertheless, the volume of such reports sometimes provided helpful insights into the event
- Volunteer cataloguers of such reports, around the world, are doing a genuinely important service to science, whatever their motives

Reunion Island





Moon-like UFO 'was rocket fuel'



SAME SHAPE FROM BELOW AND FROM THE SIDE SUGGESTS CLOUD WAS SPHERICAL

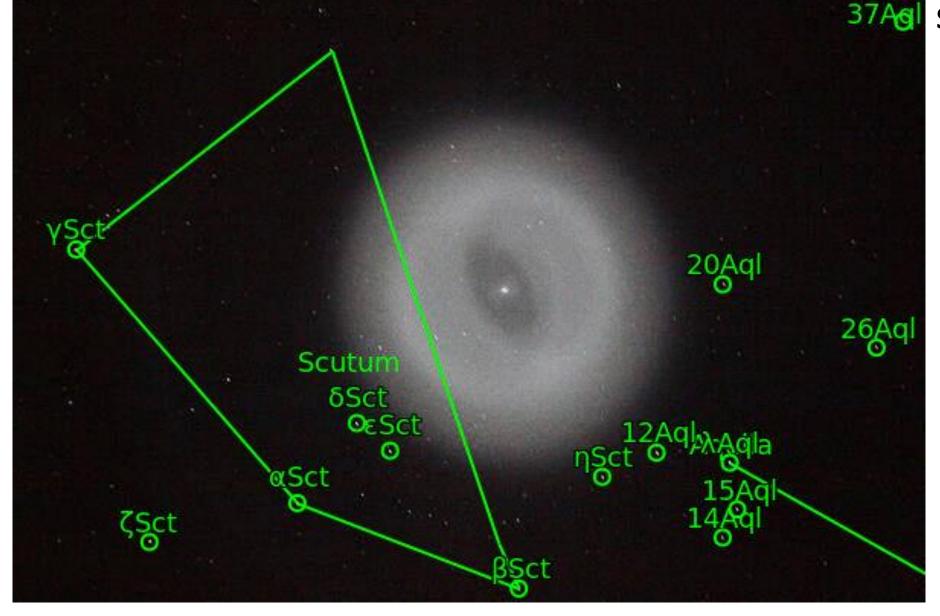
http://www.newzimbabwe.com/news-12503-Moon-like+UFO+was+rocket+fuel/news.aspx

Ben Brockert discussion....

- Goes nearly straight over Reunion Island. Looks like we have a winner. That cloud is almost definitely propellant from the Falcon 9 upper stage after it failed to restart the engine.
- Edit 2: Wrote up my results and included pictures: http://wikkit.tumblr.com/post/62684205892/tracking-a-new-space-ufo
- There are many other pictures and theories here :
- <u>https://www.facebook.com/974reunion</u> [Reunion Island facebook page]
- Also an article with a few links here: http://www.lexpress.mu/node/236109/www.facebook.com/974reunion

Mauritius newspaper website photo





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Ben Brockert: "I submitted the image to nova.astrometry.net which can analyze an image and automatically figure out where in the sky the camera was pointing. It gave this cool output [left].... we know that the rocket stage was about 1495km above sea level when it flew over Madagascar. With that distance and the angular diameter of the cloud [~ 6 degrees]], we can do some trig and calculate how big the cloud was in space. The kind of amazing answer: 174 km (108 miles) wide!"

"MOVING SLOWLY, BEFORE IT ZOOMED OUT OF SIGHT... PHONE CAMERA WAS REFUSING TO CLICK"

- It had what looked like a star in the middle, and was slowly moving through the sky... Stayed there for about 20 minutes... There are a lot of other witnesses in the area, in South Africa, Mauritius...
- https://www.reddit.com/r/Astronomy/comments/1ne46k/saw_this_t onight in reunion island what is it/?sort=old

Norman Sithole, who took the only picture that has come to light of the UFO flying over Zimbabwe, said: "At first I couldn't take the picture. The phone camera was refusing to click.

"Then I managed to get this one image. It was like a circular, bluish flare with something in the middle. It was certainly lower than the moon.

"It was visible for about two minutes, moving slowly, before it zoomed out of sight."

Other videos

- https://youtu.be/SXflkYWSGC0
- https://youtu.be/iayQ110R_hc
- TBS
- TBS

Mass UFO sighting on 29 September 2013 [Updated] 7,933 views // KoobiTalks // length 1:11

SpaceX Fuel Dump, At 18:58 on 29 September 2013 I spotted a star with a halo moving in the sky over South Africa. The halo was like that of the moon on a full moon, and was moving in a Northern direction. Sun was setting in the west, and camera is recording in a easterly direction.

Apparently it is a fuel dump from SpaceX rocket launch yesterday at 18:00

Coordinates of video: 34°02′08″S 23°02′56″E

[JEO: sharper copy at his posting at https://youtu.be/iayQ110R hc]

Photo by Anonymous. Taken in Durban:

Photo by Renier Swart. Taken in Schweizer-Reneke district, North West province (19:00 29-09-2013)

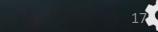
https://youtu.be/amwueJB4S80

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Mass UFO sighting on 29 September 2013 [Updated]













"Koobi talks" comments

- Dwived Toory == Saw it in Mauritius too!
- Koobi -- You really are right the video does not nearly capture what it looked like up in the sky. Before uploading I looked for something similar and if you search fuel dump you also dont really get anything, can almost say this was one of the first times rocket feul was recorded floating in our atmosphere.. We were very fortunate to have seen it, right place right time, because it was the sunset making the glow:) But I think that the photo is a clearest we will get:)
- BlackSilverProject == it would be fair to say, that the available videos DO NOT even nearly show this as well as witnessed by the naked eye, I am still looking for more vids by so far there isn't much. My first thoughts (I saw this happen from the start) was a star going supernova, but the movement change that theory. to those who so this, we are very fortunate. to those who missed it and claim, dust on lenses etc etc. you where probably watching Idols on TV.
- Jitendra Chapaneri == This is true have been seen by almost every one in Botswana

Another 'koobi' link [https://youtu.be/iayQ110R_hc]

- djmad88 == we saw it here in botswana as well.
- BlackSilverProject == Saw it in Bloemfontein, second most weirdest thing I have seen in the night sky.
- Frikkie Pienaar == I saw this too, i caught it in my orion xt10 telescope, and i saw some kind of crescent shape. weird stuff.
- Astral Traveler = This fuel dump has nice satellites orbiting it: /watch?v=Gk98keVTlao

YOUTUBE: 2013-09-29 - Meteor/Fireball Sighting from Rose Hill Mauritius at around 21h.

- ReubenMRU == Published on Sep 29, 2013 == Taken with the Canon SX20 IS... not a great low light performer unfortunately... it was barely visible on the screen, so i was aiming candidly... I then tried to take 15s exposure shots... and did get better images... We don't know what it is yet... but i think it might be a meteor... the halo must have been caused by it burning up into the atmosphere... it was heading to the north from the south, and appeared for over 5 minutes spanning across 40 degrees in the skies before disappearing... It wasn't as fast as shooting stars... which might be a positive point to support the "A satellite put into orbit" theory... Cause it's slower given that it is making an effort to leave the atmosphere...
- Praise God I was there at that moment with my camera at my waist ;-)
- birdsofawing == Fuel dump, I don't think so, they are too spherical and have been reported moving at different speeds and seen in different locations.
- Reuben == EXACTLY my thoughts, if it was a fuel dump it should have had a bright tip with a tail... that is not the case...

https://www.youtube.com/watch?v=l3SostPqtGA

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Mauritian newspaper reports: "Frenzy around a bright ball in the sky"

http://www.defimedia.info/live-news/item/39574-frenesie-autour-d-une-boule-lumineuse-dans-le-ciel.html

LINK DEAD - SEARCH ON SITE FOUND NOTHING

Danyel Kriehl = I live in Mauritius and saw it in the sky and know it was no rocket or ballon because a guy in canada saw it 2 weeks before in Vancouver. I would like to get more details from u my e-mail is danyelk@gmx.de it was small and very light like a star before it got that ring. Back in Berlin where i am from i saw 2 times a ufo but these ware different so please contact me best regards danyel.

https://www.youtube.com/watch?v=K3zUV3uKb6U&t=4s

UfoRSA (UFO Research of South Africa) Reports: "We have received the following reports on 29 September 2013. This unidentified object was seen in the Free State, Limpopo, North West, KwaZulu-Natal and Gauteng".

http://uforsa.co.za/2013/09/mass-outloenting-S. Africa // 2018 Mar 20

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www.facebook.com/SuperReubs www.youtube.com/ReubenMRU Reuben@intnet.mu Reubs Photos



https://www.youtube.com/watch?v=K3zUV3uKb6U

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UFO or Comet Ison? 15,435 views

<u>CE-5 Academy</u> = Mass U.F.O sighting Over South Africa and Mauritius tonight of what appears to be the same "object". It is unclear at this stage whether this could be a comet or a legitimate UFO . All reports states a few similarities that are confirmed in this video . The individuals in this video are speaking Mauritian Creol . The man and woman clearly state at at (0.55) how the object grew larger in size and that it looked like it was somehow walking.

Jason Wedlake = I can't believe this is a comet, I saw it with my own eyes this evening, and there was no trail that is normally left by a comet when it passes that close to earth. Another theory is that it is a the Falcon 9 dumping fuel over Africa but I watched it for over 10mins and I can't believe a rocket can dump THAT MUCH fuel and still have enough to complete it's mission.

Johan Botha = Seen by many from Buffelspoort ATKV close to Rustenburg, South Africa, including my daughter, 9 yrs. She confirms this video shows exactly what she saw. According to witnesses this pale blue anomaly grew in size in the Eastern sky, while maintaining it's position between 2 trees, and then shot across the sky in a West North Westerly direction... Fuel-dump? Maybe, but what about the sudden movement across the sky and the other little lights floating around the object in this video?

https://www.youtube.com/watch?v=K3zUV3uKb6U&t=4s

[image brightened] Aeolia Shenberg 481,357 views

UFO in Mauritius 9/29/2013 at around 9:00pm



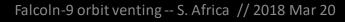












Bloemfontein (South Africa) Sighted on Sunday 29. September 2013 Shape: Circle | Duration: 10 min

- I was on my way to gym at 19:00, as I was driving I saw a light in the sky that looked like a star, I thought it was a helicopter with a spotlight. There was a smoke light ring around the bright light which almost looked like something was being burned. The object was hovering and made zig zag movements. I quickly phoned my parents who live in Bethulie +-180 km from Bloemfontein and they could also see this strange object. Strange circle beams came out of the object. As i was looking at the object I saw smaller lights which rotated clock-wise around the object and I saw smaller objects coming out moving into the opposite direction. The bigger light or object suddenly disappeared from a standing still position to the North East.
- Nick -- So glad to find that something online about this. I'm a game ranger in Limpopo and was out on a night drive when I spotted this same thing. At first we thought it was the moon behind some cloud, but then we noticed the 'star' at the center of the haze and also that it was moving. I radioed other rangers and everyone could see it but no-one had any explanation. I wondered whether it was an exploding satellite or something of that nature, but I haven't seen any news. Hopefully something will turn up.
- Luigi -- My Fiance and I also saw it around 7 pm in Klerksdorp. It looked like a star with mist all around it, completely round until the star vanished and the mist "faded" away. I managed to get a photo on my I phone
 - ComorosMan -- We saw it at about the same time from Comoros Islands (around 8pm). I was on my way home. i also phoned friends of mine to check if they could see it and they did.
- http://www.ufohunters.com/sightings/search/524878083c024d5ed6000010/UFO%20Sighting%20in%20Bloemfontein%20 (South%20Africa)%20on%20Sunday%2029%20September%202013

In the UFO websites

September 30, 2013

Halo phenomenon or UFO over South Africa - Sept 29, 2013



At 18:58 on 29 September 2013 a star with a halo moving in the sky over South Africa.

The halo was like that of the moon on a full moon, and was moving in a Northern direction.

Reports about a unidentified flying object streamed in from observers in southern Africa and the Indian Ocean islands of Mauritius and Reunion.

Many people wondered whether it was a UFO, a satellite or a star cluster but the strange phenomenon appears to be a fuel dump from SpaceX rocket launch at 18:00.

READERS REFUSE TO BELIEVE IT

Anonymous October 2, 2013 at 7:19 AM == just got an email from someone who saw this in Kalahari, typed in "ufo southern africa 29/09/2013" and this site was the first hit, isn't the internet wonderful! Peter M

Anonymous October 3, 2013 at 6:50 AM == If you look at the top image carefully you can see that the "cloud" around the "star" **forms a torus**. It is subtle but this is definitely not some fuel dump. Also, of note is how the nucleus at the center of the toroidal structure is giving off light and how the outer halo seems to have less of a clear structure when compared to the toroidal structure.

Anonymous October 4, 2013 at 11:42 PM == This is definitely not a fuel dump. Because if it is in the earth's atmosphere the gas would have evaporated eventually and would have stayed behind before the satellite took its course to the outside, not follow the object or get bigger and more clearer than it was. Why would someone want us to believe in something that is not true and why do they think people will believe the story, are they afraid to say they do not know what it was or that NASA did not pick it up until it happened. Something is getting covered up.

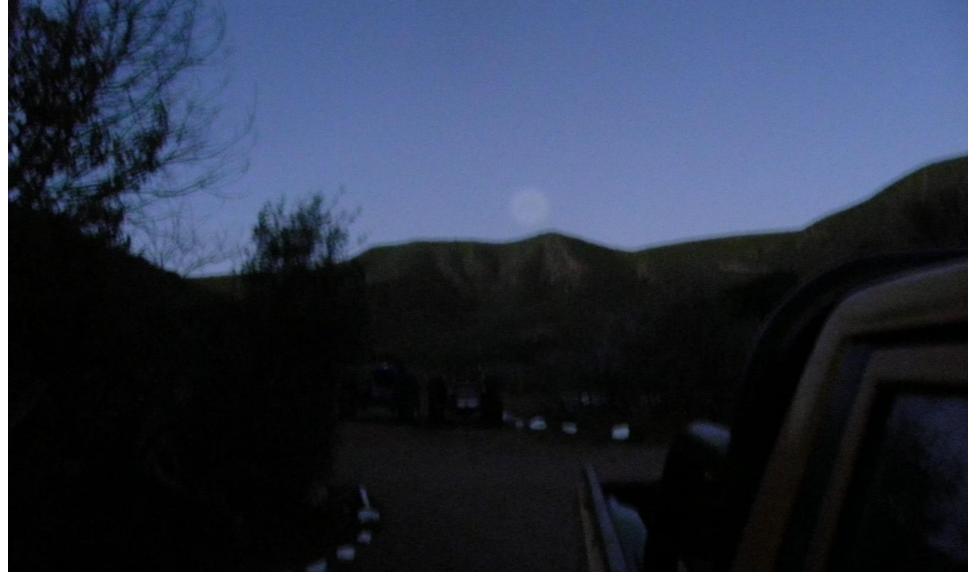
Die Wille Zaan Daniel March 11, 2014 at 1:24 AM == I saw the exact same insident. as far as I can remember the one I saw came towards my house i could not say how far it was away but it had like a blue plasma spinning arround two to five revelutions a second the blue ora got big as it got closer. it hovered for a few second. i yelled at my wife to bring the camera and took 2 or 3 pics on my cam but you can not see the neclues the light was very sharp penetrating light spot at the center. it eventually turned to the north and moved slowly over the hills. as far as i know fuel dumps dont travel in balls and it does not glow this object was in a very low part of the atmosphere.





Uploader comment: At about 7 pm on 29/9/2013, guests around a fire in the Boma at Baviaans Lodge, Eastern Cape, South Africa, saw a large round light in the North eastern sky, about 45 deg above the horizon, the large light object, appeared to have a ring light band around it, with a bright star like object in the centre, after being stationery for about 2 minutes, the large light moved down towards the horizon, fading away as it did, disappeared after 2 minutes, this was about the size of a full large moon, which moved across the sky 45 deg to horizon in about 2 minutes. The camera was grabbed and managed to get 1 pic in before it disappeared, the object was viewed by 10 people at the Lodge, and sightings of this same light have come in from other parts of South Africa.

https://www.unexplained-mysteries.com/gallery/images/10278/ufo-2932013



S. Africa Sep 29, 2013

CAMPFIRE SIGHTING



Image credit: Rob le Roux, © <u>Baviaans</u> Lodge, Eastern Cape, South Africa https://www.unexplained-mysteries.com/forum/uploadsgallery/gallery_142634_8_924852.jpg

Durban (South Africa)

Sighted on Sunday 29. September 2013

Shape: Circle | Duration: 6 minutes

Source: NUFORC [http://www.nuforc.org/]

[THE NATIONAL UFO REPORTING CENTER]

A round object in the sky with an aura of light around it moving very slowly across the sky. The object seemed as if it was in space and the light around it very bright.

http://www.ufo-

hunters.com/sightings/search/5305d4a483c78d384ec38a9e/UFO%20Sighting%20in%20Durban%20(South%20Africa)%20on%20Sunday%2029%20September%202013

UFO Over Zimbabwe, South Africa Big As Moon, But Travels Fast Across Horizon With Many Orbs Surrounding It, Sep 2013, UFO Sighting News.



Date of sighting: Sept 29, 2013, 7-7:15 PM

Location of sighting: Harare, Zimbabwe, South Africa

Source: http://www.thezimbabwemail.com/zimbabwe/18385-strange-moon-like-

object-seen-in-mashonaland.html

This is a UFO that was sent to collect or distribute the drone orbs it uses to watch and monitor human society. I also believe that these orbs may be capable of reading or listening in on human thoughts up to 1km away, as video evidence of people mentally calling them on video has proven it works. SCW

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Scott Waring 12:20 PM

http://www.ufosightingsdaily.com/2013/10/ 18 Mar 20 ufo-over-zimbabwe-south-africa-big-as.html

The Zimbabwe Mail News states

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 HARARE, Zimbabwe - There are reports of an unusual moon shaped object that flew across the sky between 7 and 7.15pm on Sunday evening. Zimbabwe State media says it received calls from people in Karoi, Mashonaland West; Mt Darwin in Mashonaland Central and Mutoko in Mashonaland East provinces, all confirming they have seen the object, which they described as bigger than the moon and moving from the east to the north. People confirmed having seen the object from as far as in Botswana, South Africa and Malawi. When contacted for comment, an official from the Meteorological Services Department said they can only comment after liaising with their officers in the respective places.

Sunday 'UFO' was a rocket // SOUTH AFRICA Monday 30 September 2013 - 2:35pm

JOHANNESBURG - An object seen in the sky across the country on Sunday was a rocket and not a UFO as it was widely believed, a satellite tracking expert said on Monday. Retired astronomer from Cape Town, Greg Roberts said: "What happened was that at 6pm our time yesterday [Sunday] a rocket, called Falcon, was launched from Vandenberg Air Force Base in California and carrying several satellites." "The rocket was designed by a company called Spacex which has former South African Elon Musk as founder and chief designer."

Roberts said the rocket was launched southwards from California towards the south-polar regions, which it passed over. It started heading northwards again and just east of South Africa. "Shortly after 7pm it apparently either vented or released rocket fuel still in its fuel tanks as the basic mission of placing several satellites in orbit had been achieved while over the Antarctic region and this produced the large halo-like object that people saw." It was possible that the rocket could have been doing a rocket burn to slow down so that it would descend from orbit and burn up in earth's atmosphere later.

Roberts said this was standard practice to avoid producing too much debris or junk in orbit. "But in either case it was propellant or rocket fuel coming from the rocket itself." Roberts said the venting or firing occurred when the rocket was at its maximum altitude of around 1600 kilometres.

That had been widely seen as it passed east of Durban and then passed over Madagascar. "At about 7.04pm the event was basically over as the satellites and associated rocket entered earth's atmosphere [and] no longer reflected sunlight." Social networks were abuzz on Monday morning with people from KwaZulu-Natal, Limpopo, Free State, North West, and Gauteng claiming to have sighted the object.

https://www.enca.com/south-africa-life/sunday-ufo-was-rocket







Picture: Derek van Dam. Photo: eNCA / Derek van Dam

https://images.enca.com/enca/Sky_halo.jpg

DISCUSSION & CONCLUSIONS

- CLOUD FROM FUEL DUMP FOLLOWED FAILED SECOND STAGE REIGNITION ATTEMPT
- TIME OF PLANNED REIGNITION ATTEMPT UNKNOWN
- NO ENGINE PLUME OBSERVED
- NO RECOGNIZABLE DOUBLE-PLUME EVENT IMAGED OR REPORTED
- AMAZING NUMBER OF OBSERVERS ACROSS WIDE REGION IN SOUTHERN AFRICA AND SW INDIAN OCEAN ISLANDS