

---

**Because of the Ever-Increasing Firepower of US Nuclear Forces, and the Severe Technical Shortfalls in Russian Space-Based Sensing Technologies, Russia Has Been Forced Into a Doomsday Posture Where Under Certain Conditions Its Nuclear Forces Will Be Launched Automatically**

---

---

**The Russian Experience With the False Alert of January 25, 1995**

---

---

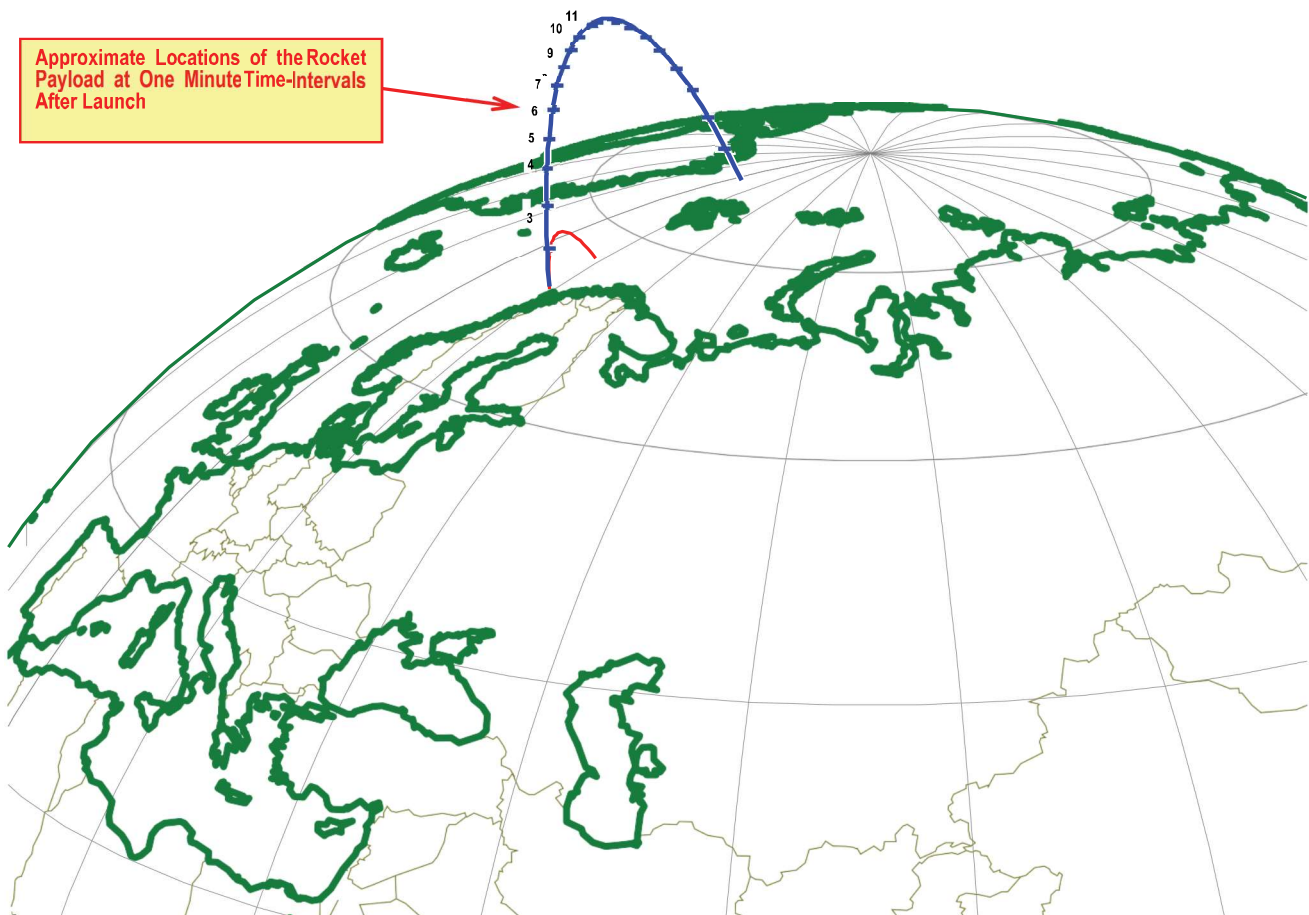
# The Dog that Didn't Bark

---

## The Russian False Alert of January 1995 What happened?

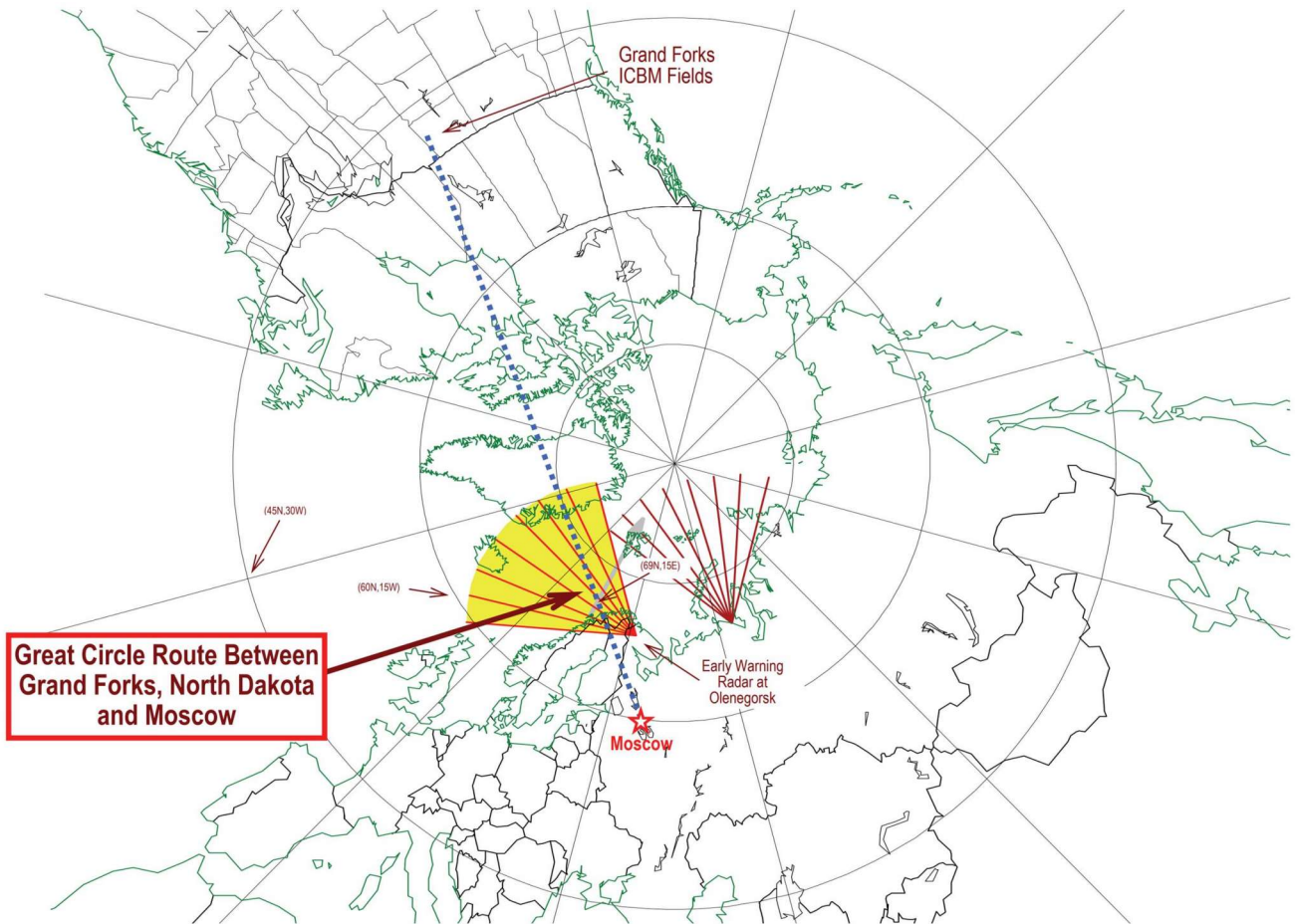
Trajectory of the Black Brant XII Sounding Rocket

---



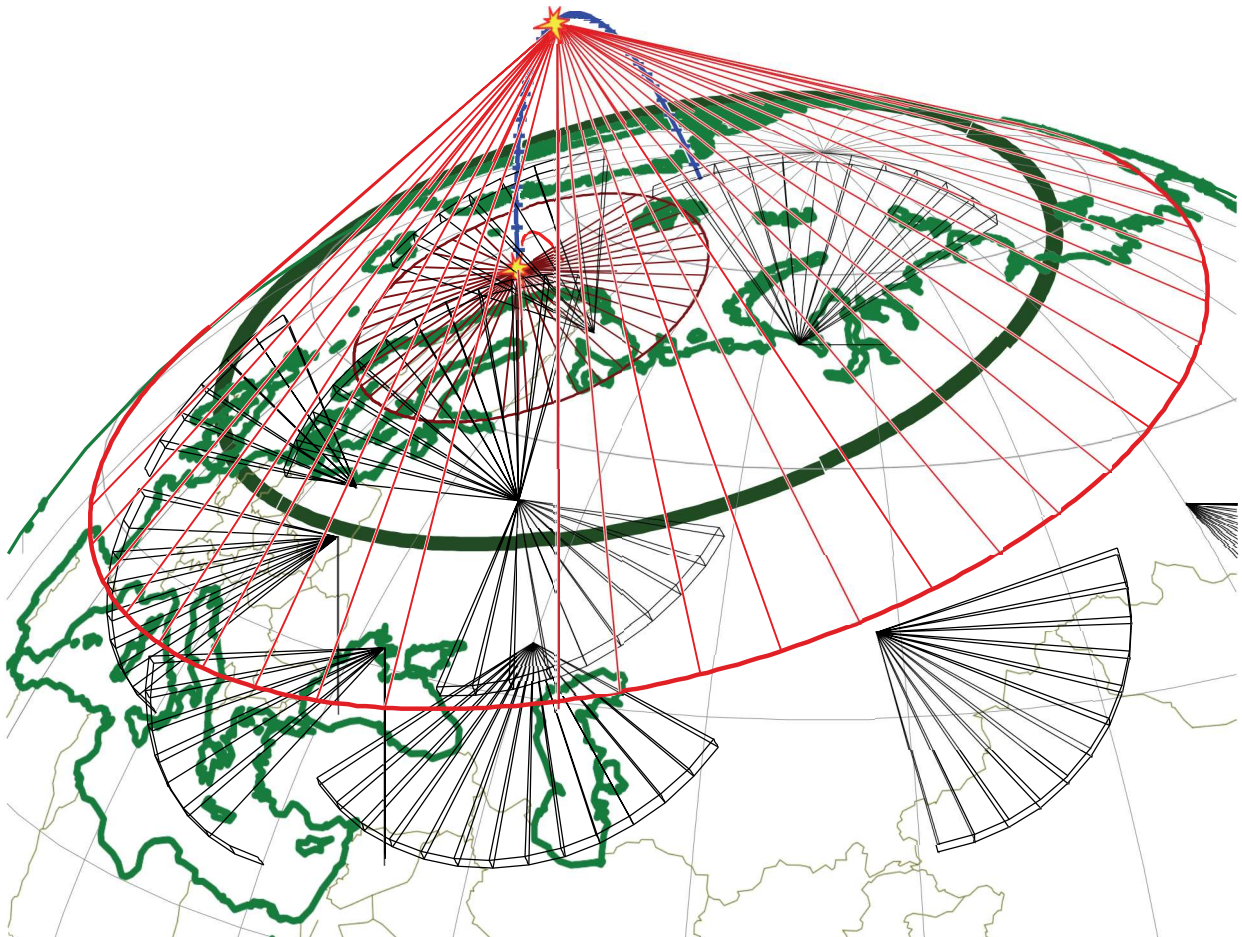
**ROCKET REACHED APOGEE WHEN IT WAS IN THE MIDDLE OF THE MAJOR US-ICBM ATTACK-CORRIDOR BETWEEN GRAND FORKS, NORTH DAKOTA AND MALMSTROM, MONTANA!**

---



**Area of Radar-Blackout from a One Megaton Nuclear Explosion at 1350 Kilometers Altitude**

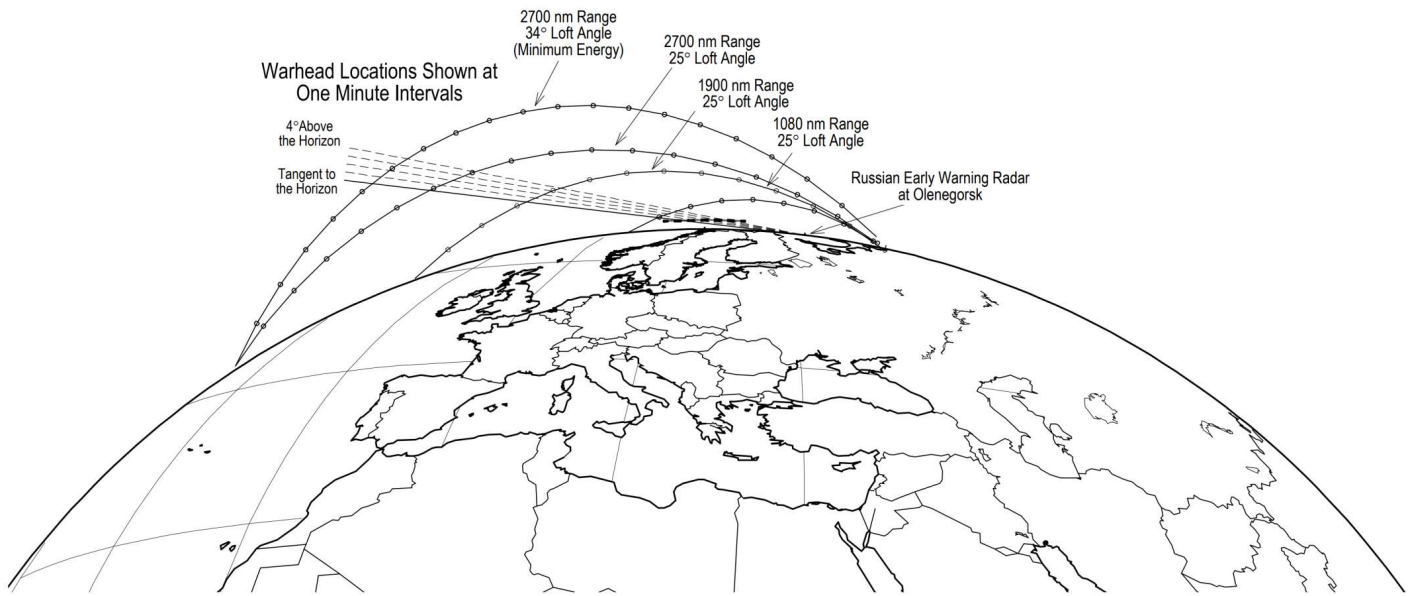
---





# Sequence of Events Associated with a High-Altitude Nuclear Explosion and its Effects on the Olenegorsk Early Warning Radars

---



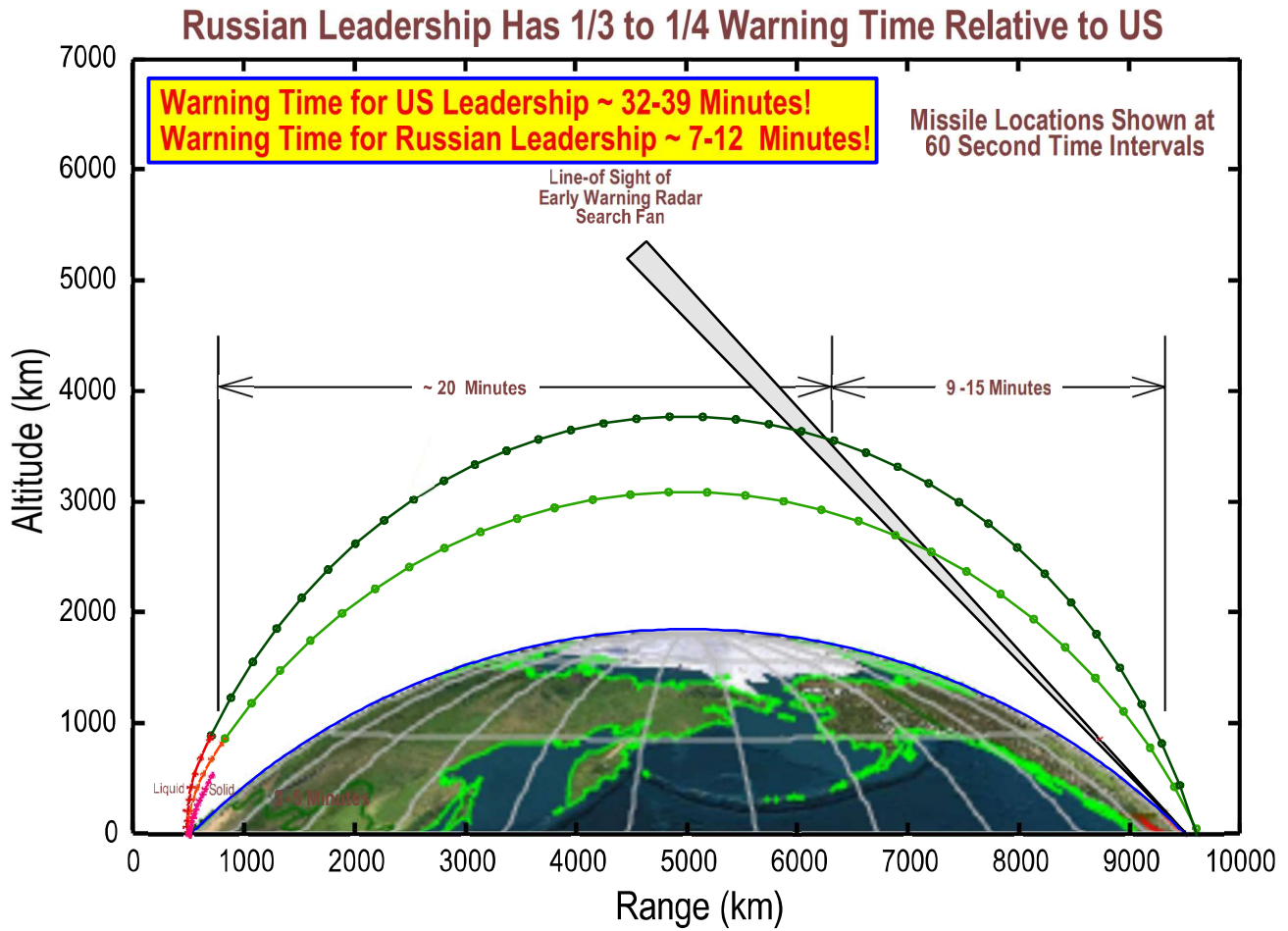
---

## Current Russian Early Warning Predicament

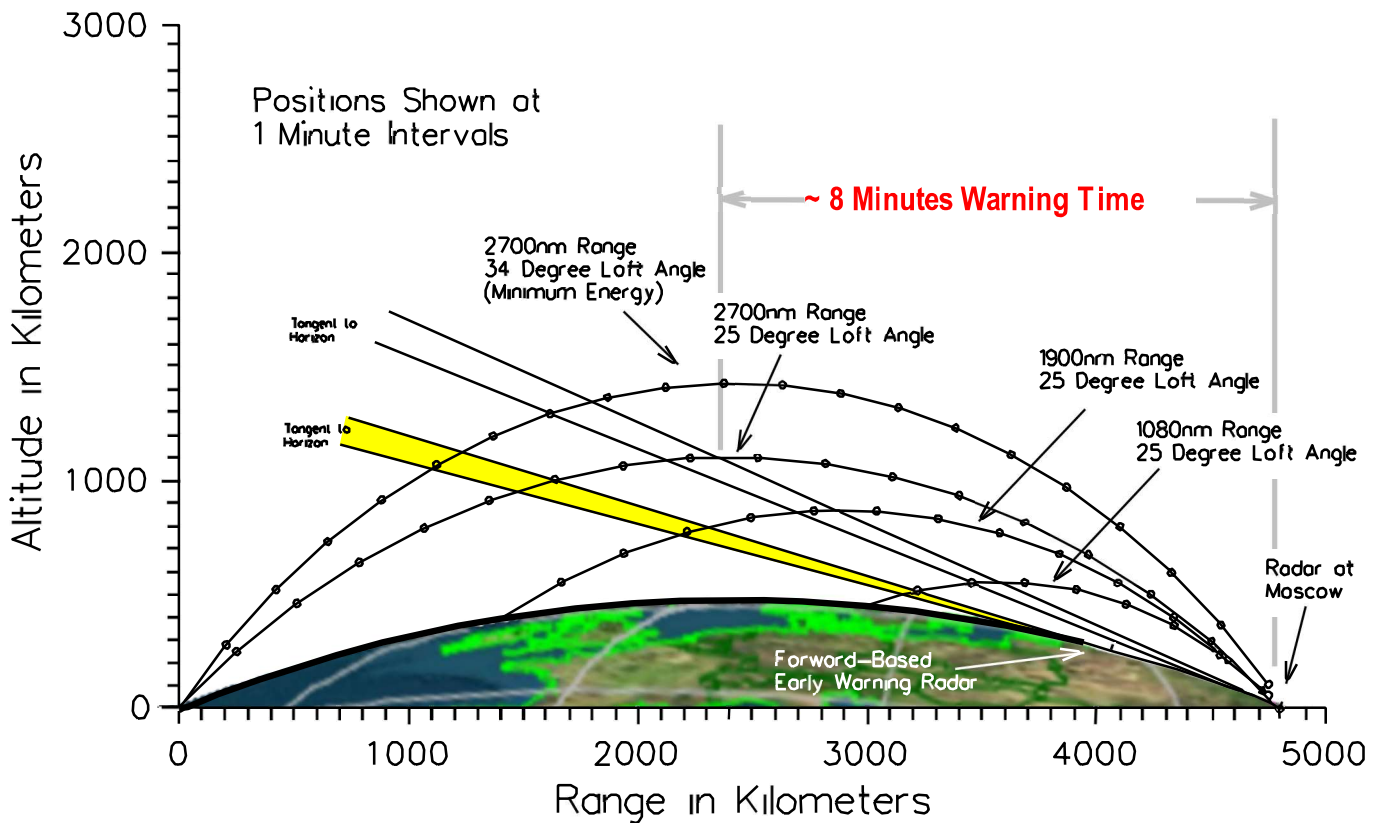
---



Russian Leadership Has 1/3 to 1/4 the Warning Time Compared to That of US Leaders



Russian Leadership Has 1/3 to 1/4 the Warning Time Compared to That of US Leaders



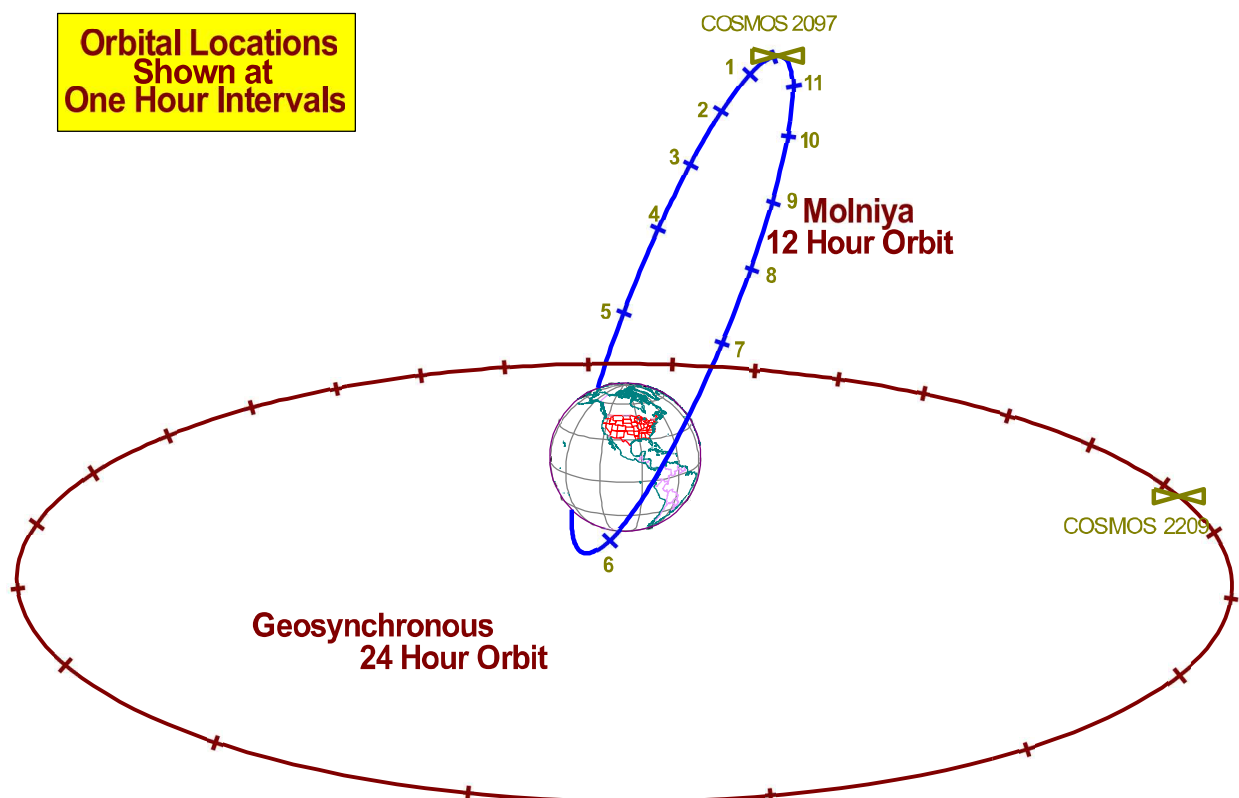
---

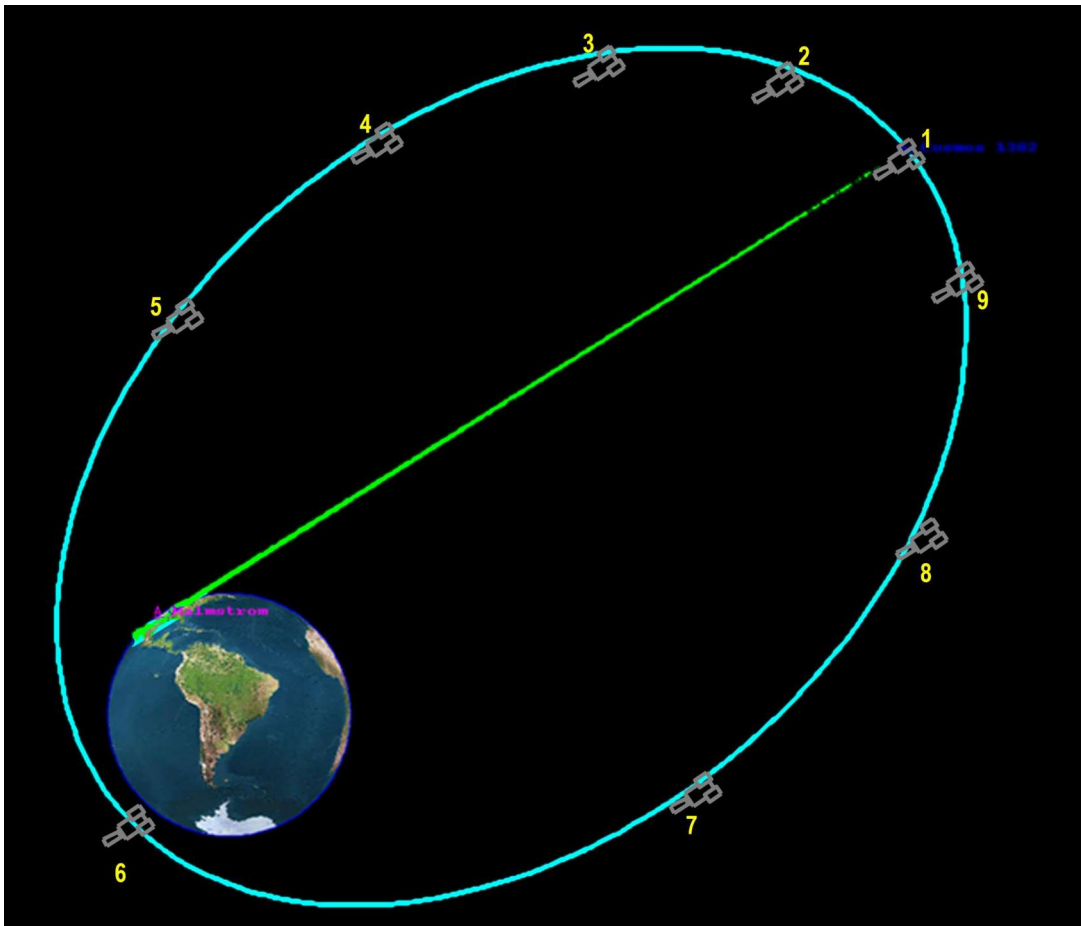
# Russian Satellites Look at a GRAZING ANGLE to the Earth

---

## View of Cosmos 2209 and Cosmos 2097 Orbits

---



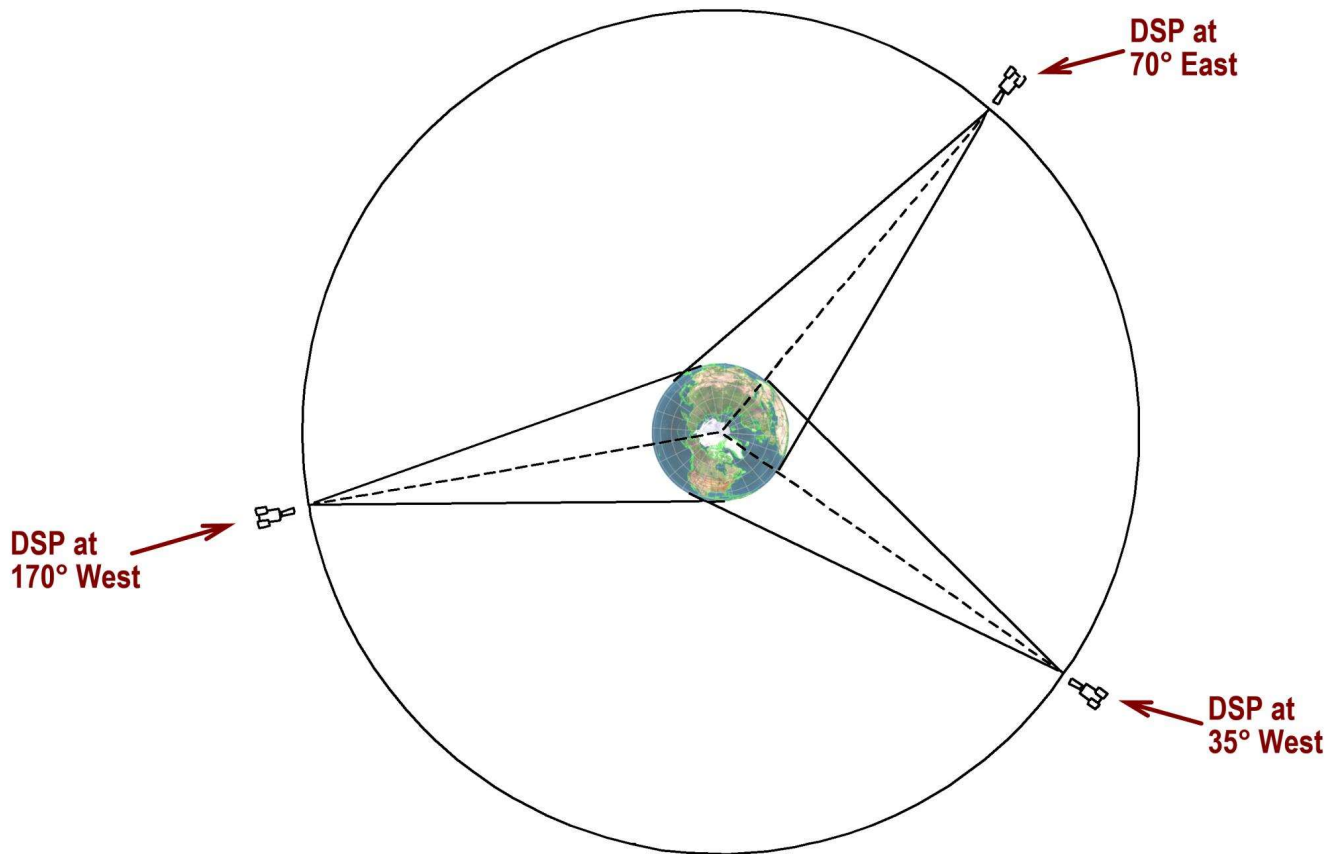


---

**US Satellites Look STRAIGHT DOWN  
at the Earth**

---





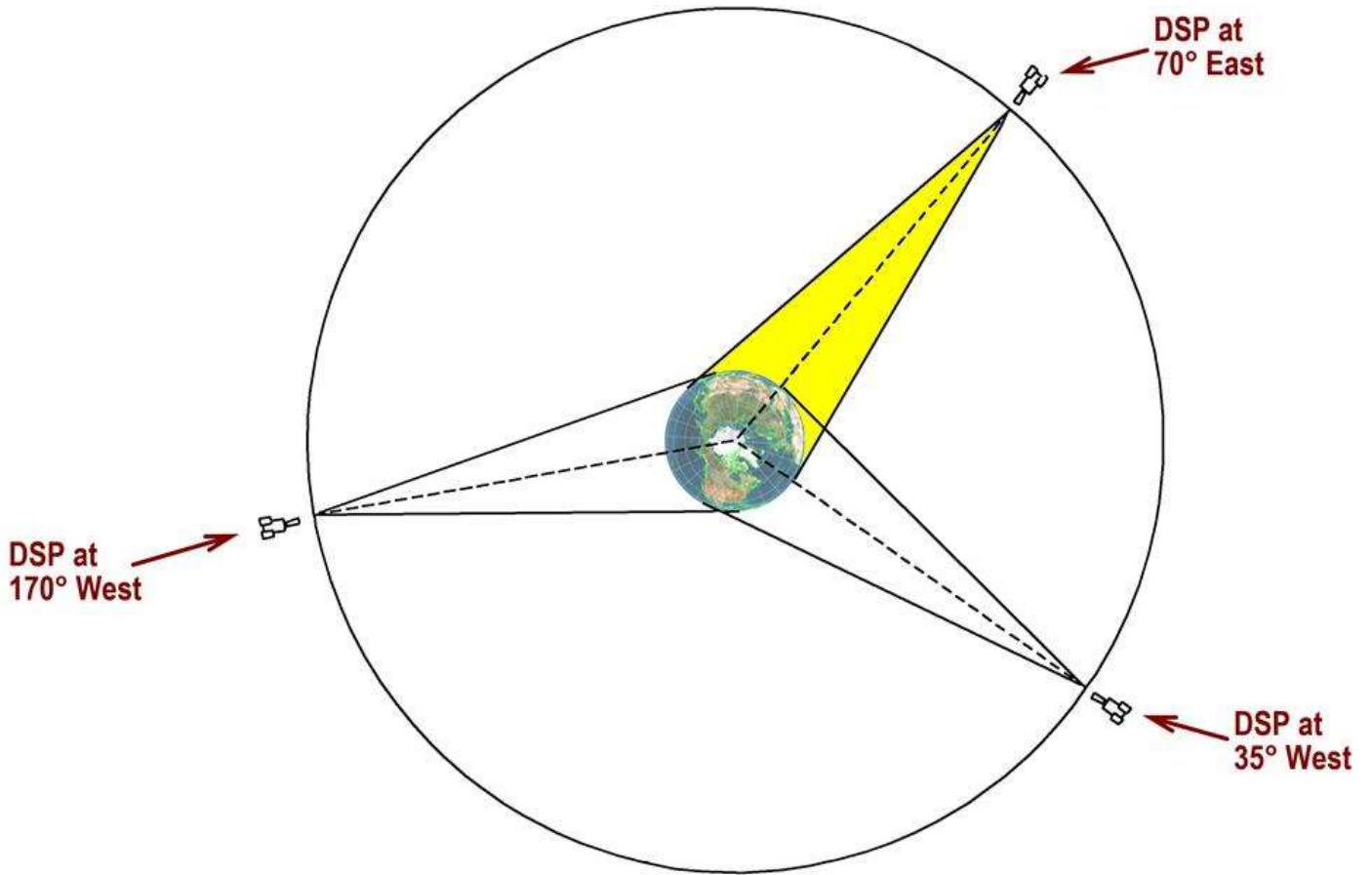
---

## Areas of US Global Monitoring of Missile Launch

---

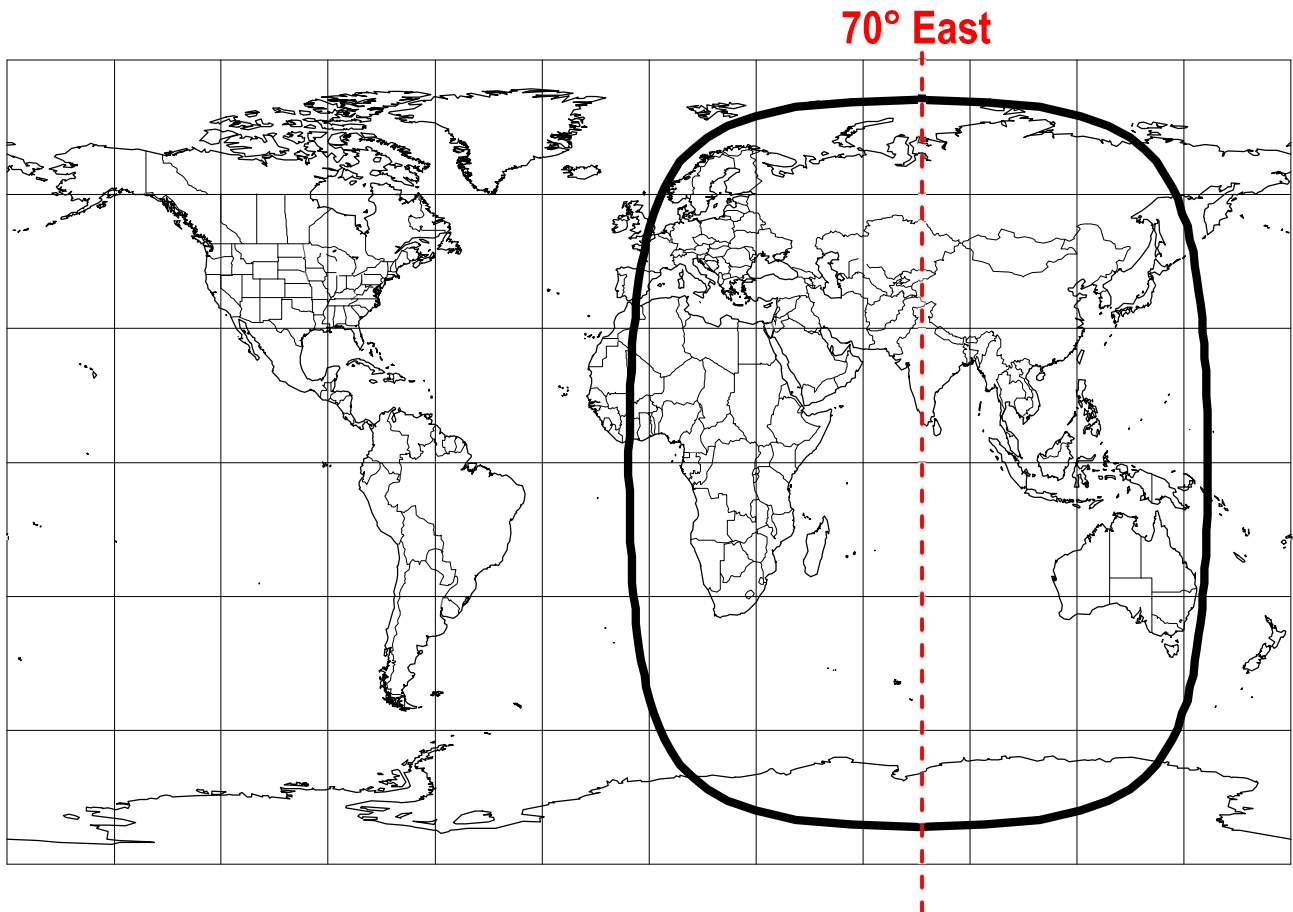
# Rough Locations of US LOOK-DOWN Early Warning Satellites

---



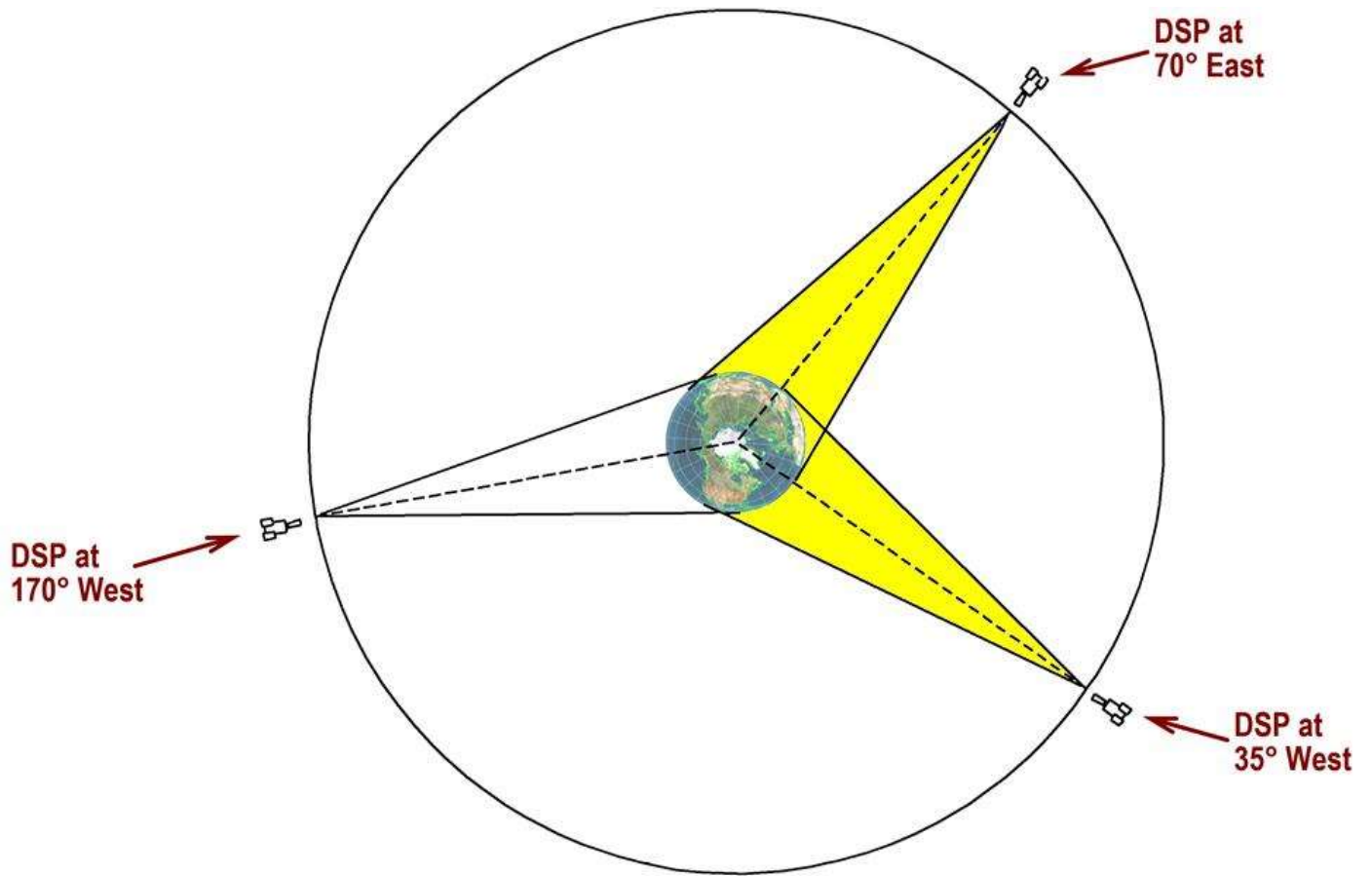
## Field of View LOOK-DOWN of US Geosynchronous Early Warning Satellite at 70° West

---



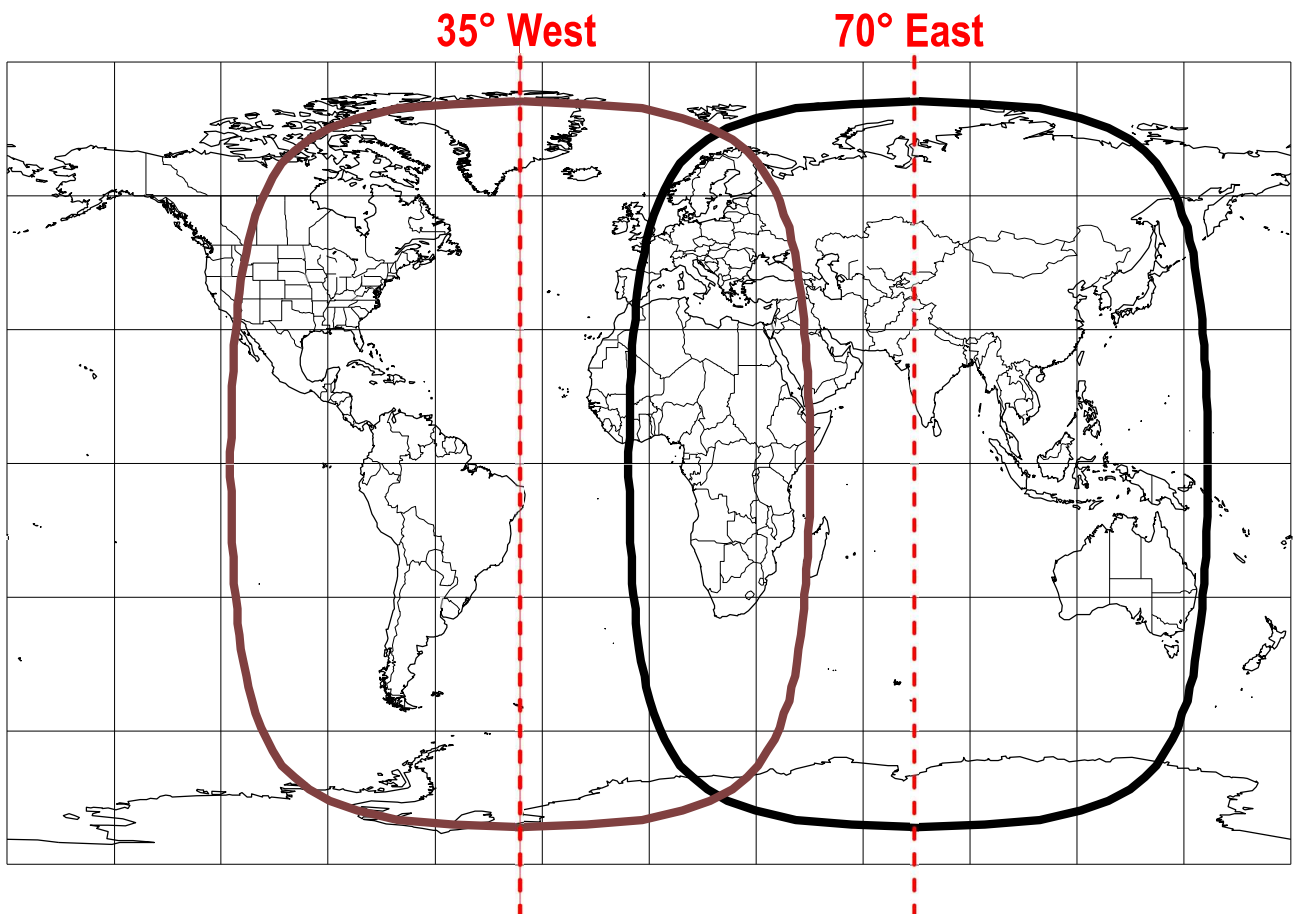
# Rough Locations of US LOOK-DOWN Early Warning Satellites

---

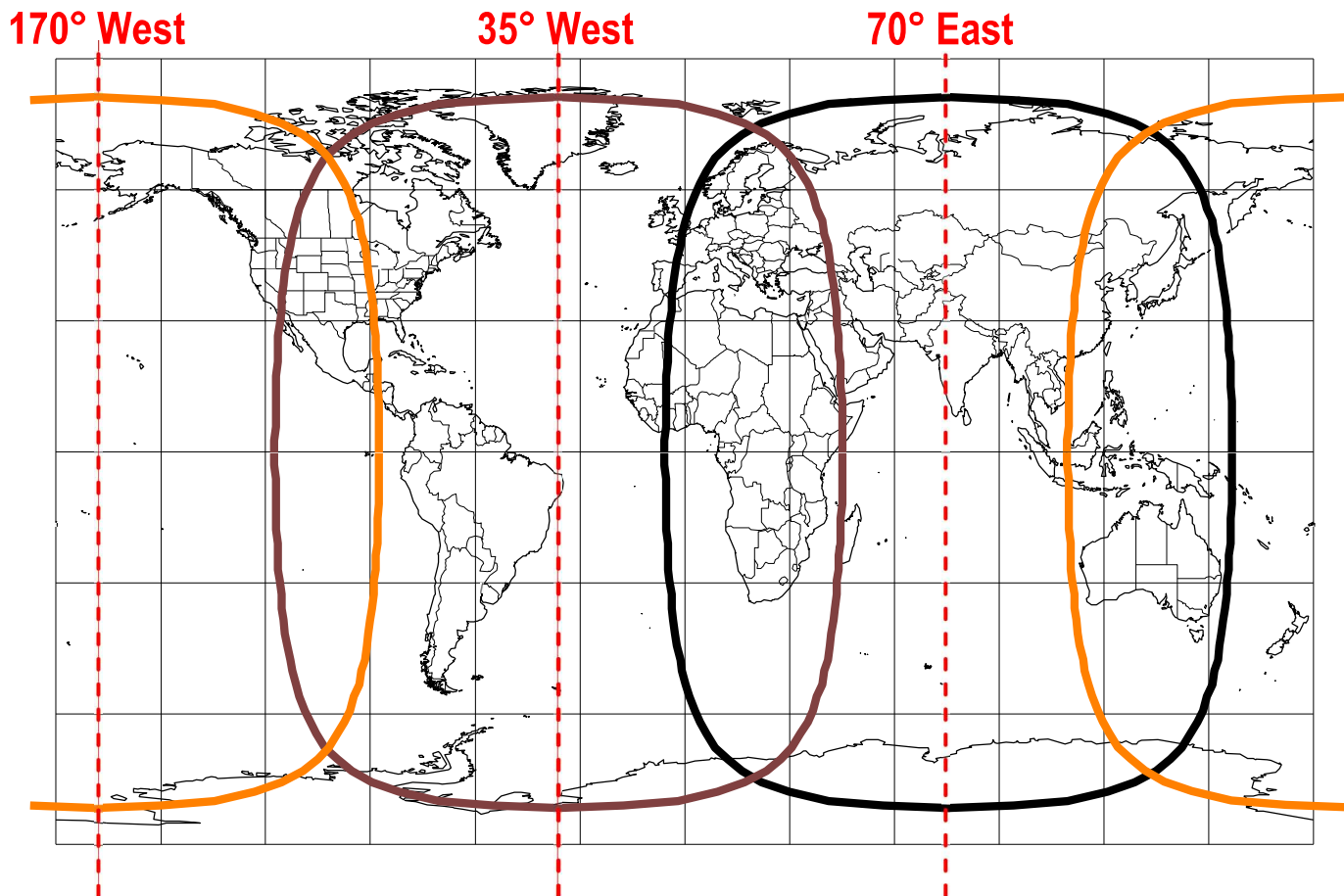


## Fields of View of US Geosynchronous Early Warning Satellite at 70° West and 35° East

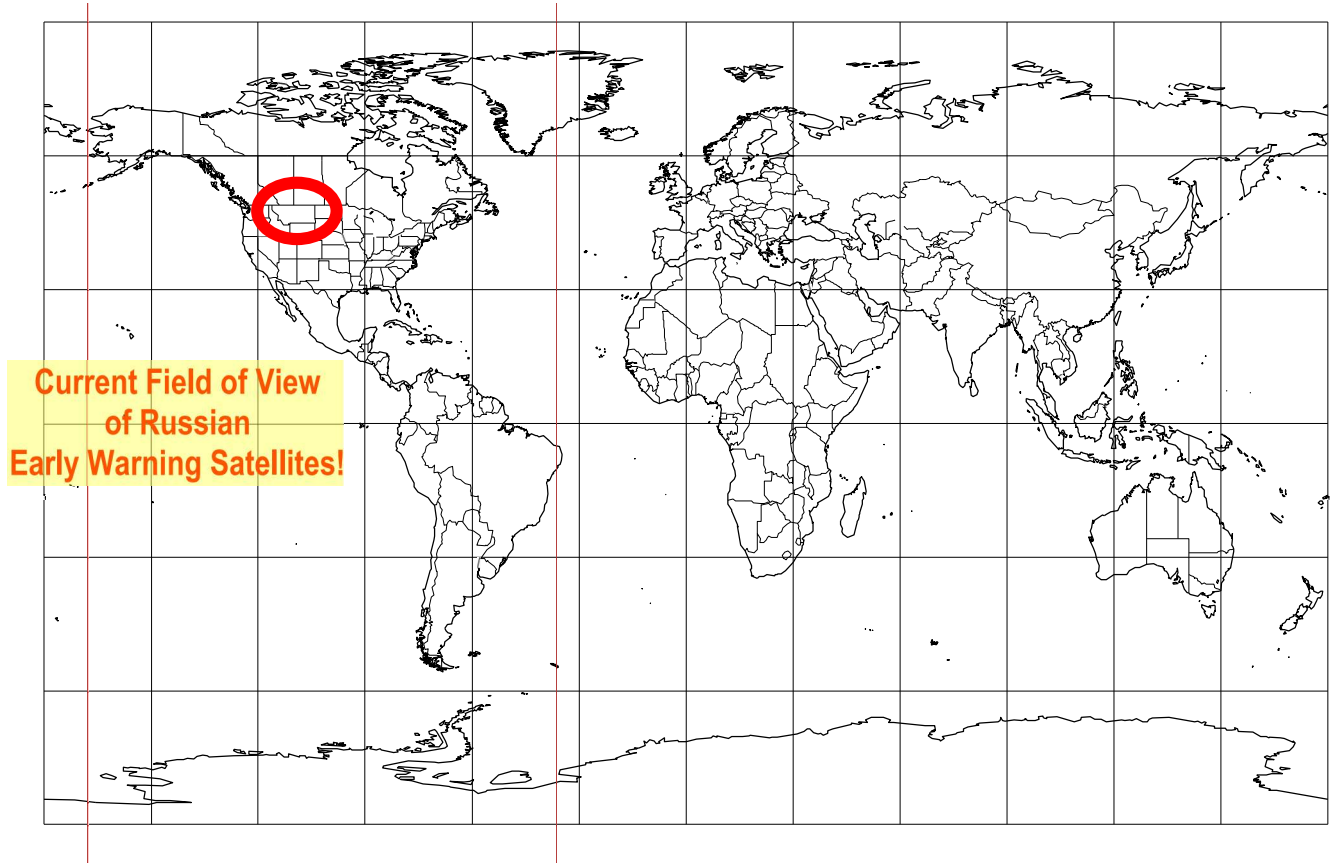
---







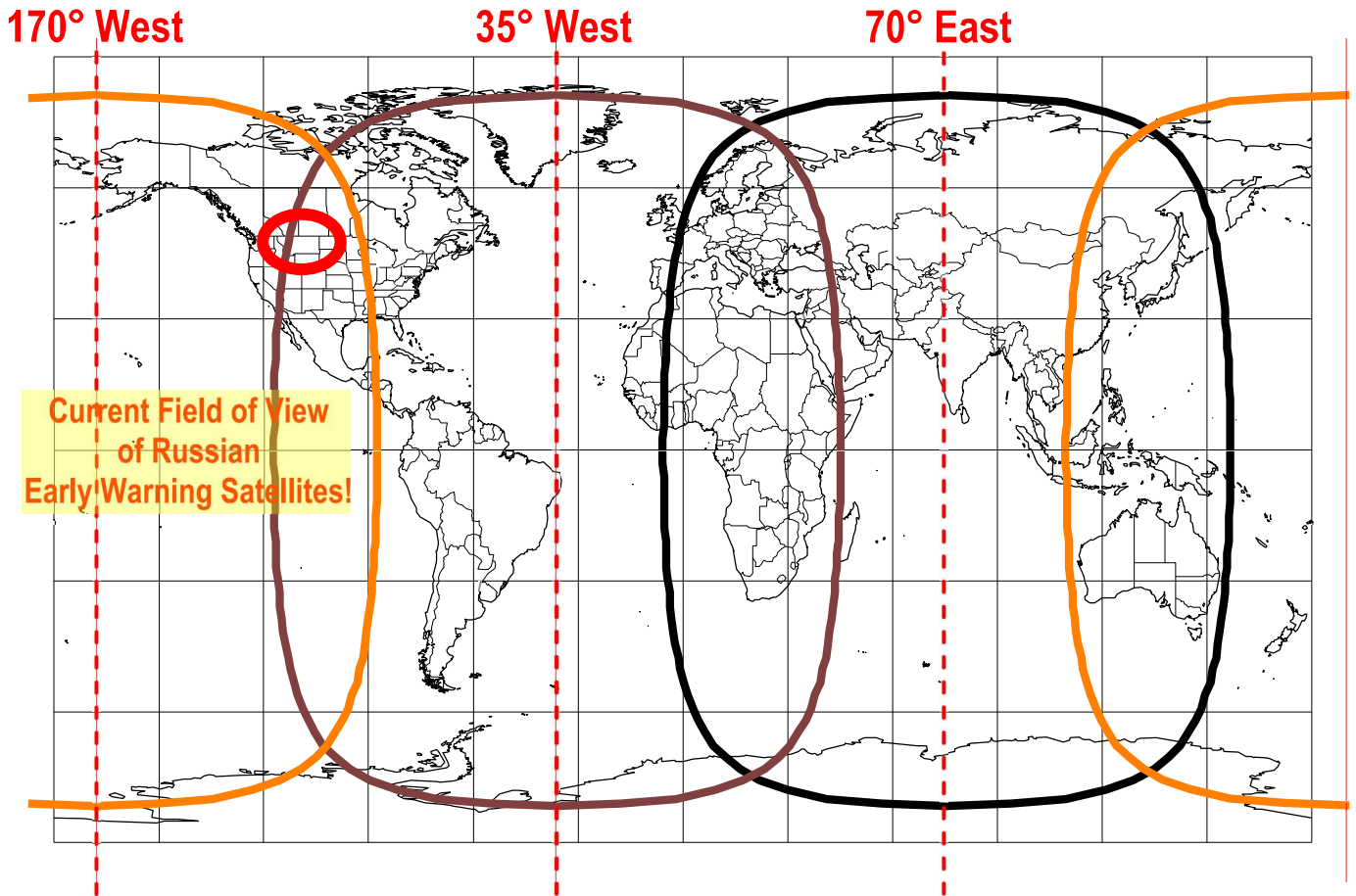
## Areas of US Russian Monitoring of Missile Launch



---

## Comparison of Russian and US Areas of Missile Launch Monitoring

---



## Russian Response to Published Analyses of Russian Satellite Shortfalls





### What measures should the Russian Federation take?

**Alexei Arbatov**, Head of the Centre for International Security IMEMO RAN, RIAC member

**Vladimir Dvorkin**, Principal Researcher, Political Military Analysis and Research Projects Sector, International Security Center IMEMO RAN, Major General, RIAC expert

**Victor Yesin**, retired colonel-general, RIAC expert

The information from American experts that Americans are conducting a deep modernization of their nuclear warheads to improve their qualitative characteristics is not new to Russian military and political leadership. This fact is **taken into account** during the development and implementation of the country's defense plan.

To maintain a nuclear missile balance with the United States, Russia is taking effective measures ... to build up the capabilities of its missile ... missile warning systems.

Deployment of a new unified space-based detection and command and control system has begun, with an expected completion of a new constellation of spacecraft in near-Earth orbits by 2020.

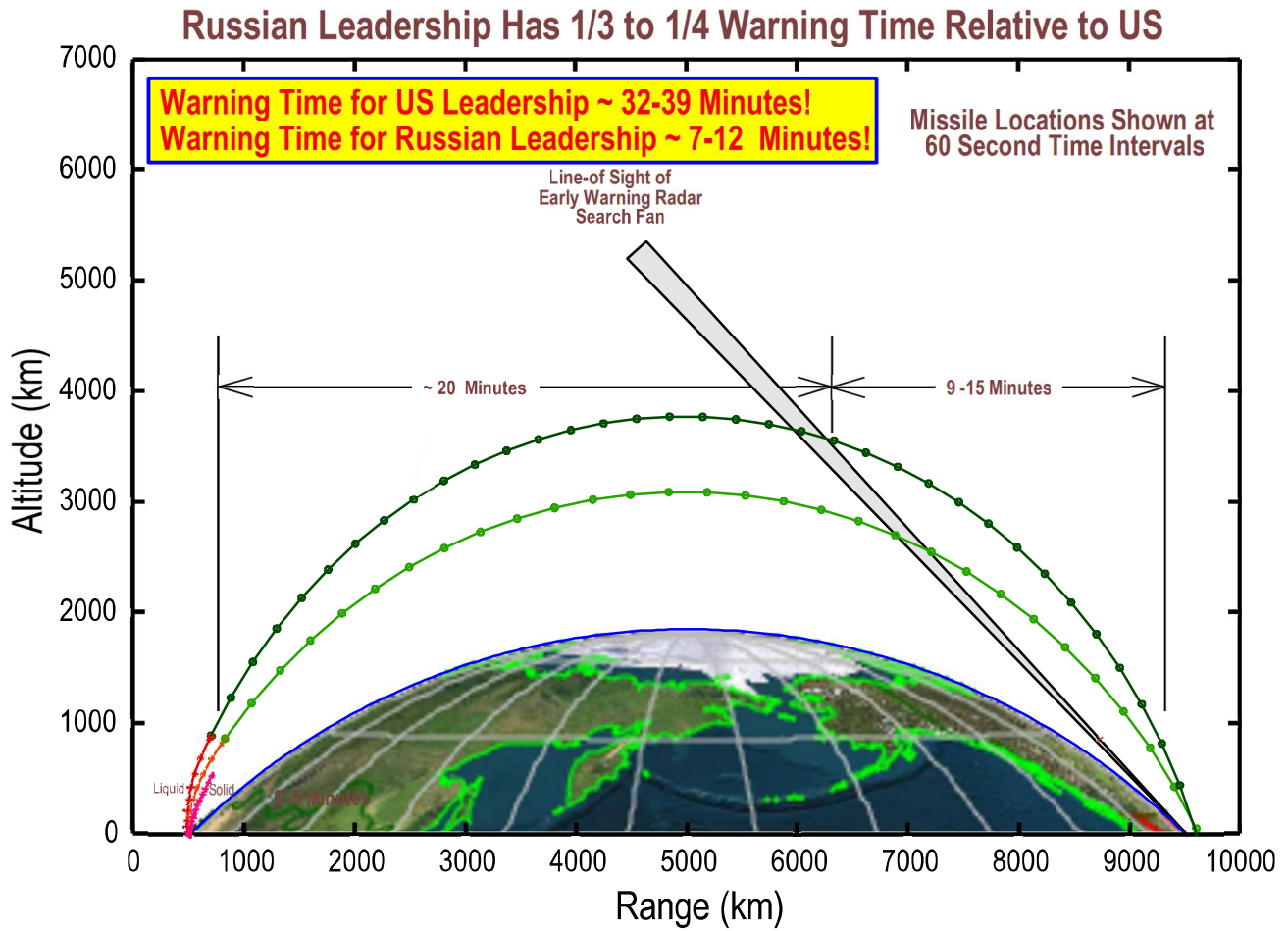
With this in mind, it can be argued that Russia is capable of timely detection of a nuclear missile attack and an adequate response to it. The missiles in service with the strategic nuclear forces, as has been repeatedly asserted at the highest military and political levels, can overcome the missile defenses of any adversary that it could create in the

---

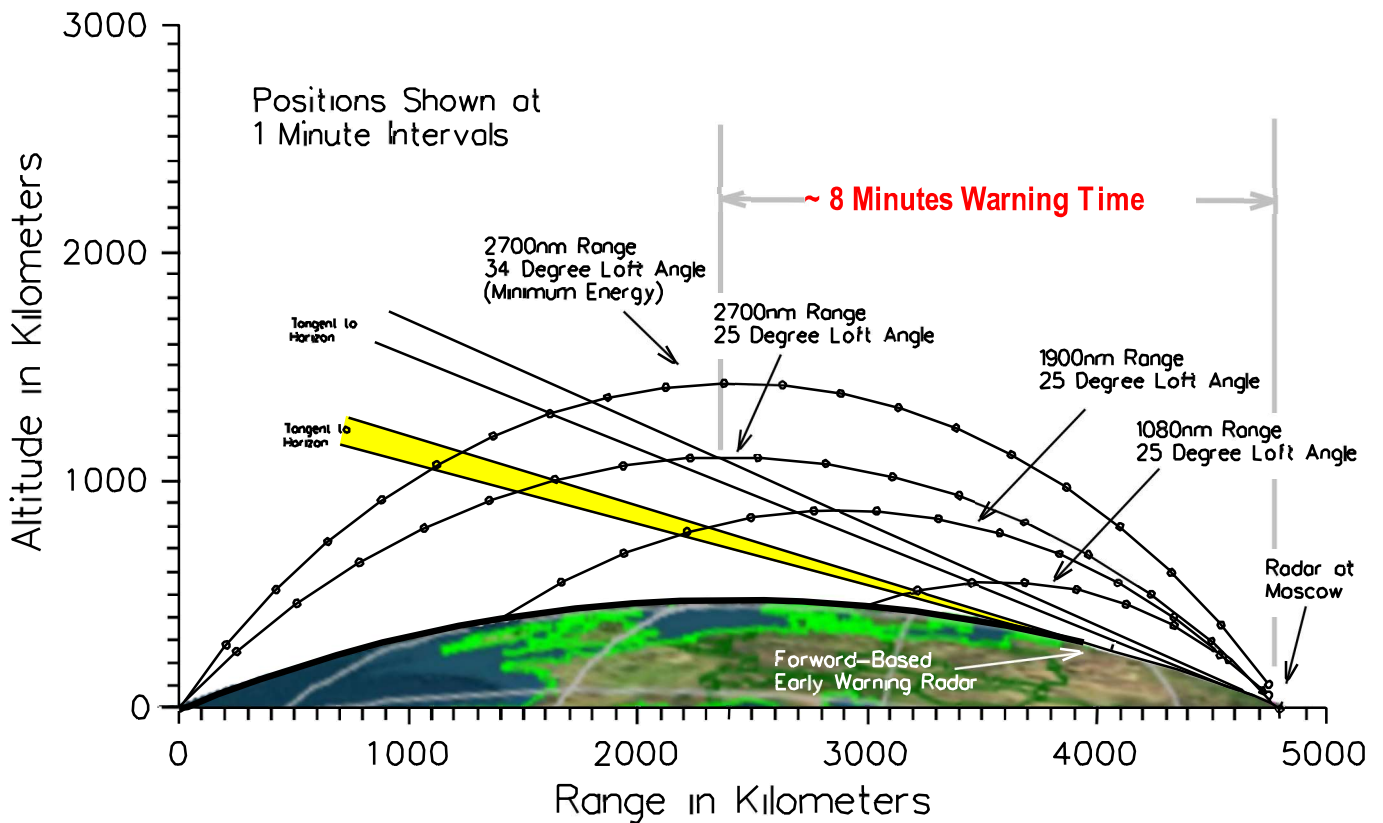
## Russian and US Decision-Making Timelines

---

Russian Leadership Has 1/3 to 1/4 the Warning Time Compared to That of US Leaders



Russian Leadership Has 1/3 to 1/4 the Warning Time Compared to That of US Leaders



## Estimated Time Needed to Carry Out Nuclear Launch-Operations No Matter What Response Is Chosen

### Time Needed to Carry Out Basic Nuclear Weapons Launch-Operations

Time for attacking missiles to rise over the horizon into the line-of-sight of early warning radars	1 minute
Time for radars to detect, track, and characterize detected targets, and to estimate the size and direction of motion of targets	1 minute
Military and civil command conference to determine response	1 to 3 minutes
Time for command and unit elements of silo-based forces to encode, transmit, receive, decode, and authenticate a launch order	2 to 4 minute
Time for missile crews to go through full launch procedures	1 to 3 minutes
Time for launched missile to reach a safe distance from its launch-silo	1 minute
<b>Total time consumed in unavoidable and essential operations</b>	<b>7 to 13 minutes</b>

#### NOTES:

If a short time-line attack is attempted against Russia, a Russian response aimed at launching silo-based missiles before nuclear weapons detonate on them would require time for several technical operations. Time would also be needed by political leadership to assess the situation and decide whether or not to launch the silo-based missile force. The amount of time available for decision-makers to assess the situation and decide whether or not to launch silo-based nuclear forces is the difference between the time it takes for warheads to arrive at targets and the time needed to carry out operations no matter what response is chosen.

---

## What Could Happen if Russian ICBM's Are Launched Due to an Accidental False Alert?

---

---

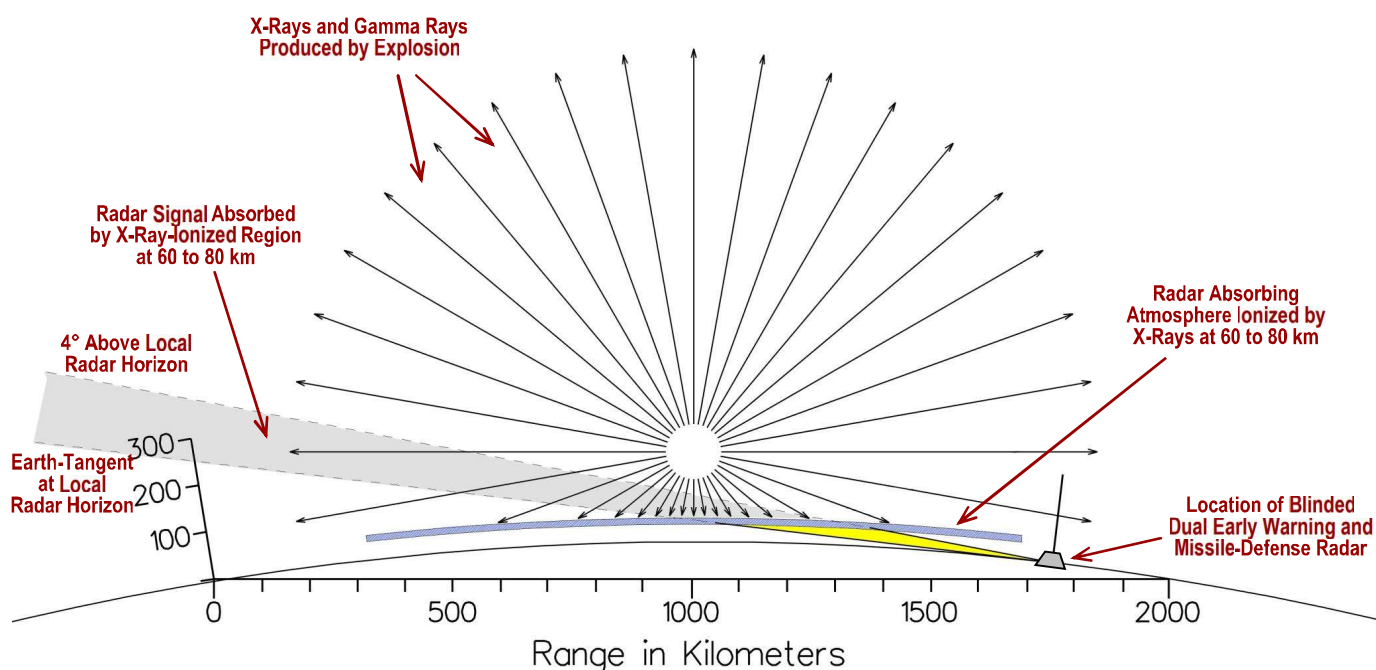
# Attack on US Dual Missile Defense and Early Warning Radars

---

---

## High-Altitude Nuclear Explosion to BLIND US Dual-Purpose **Missile Defense** and **Early Warning** Radars

---





## How an Attack Aimed at Blinding the Dual Missile Defense and Early Warning Radar on Cape Cod, Massachusetts Might Be Seen If the Attack Occurs During the Night in Washington DC

---



The upper left photo is the skyline of Honolulu moments before the Starfish high altitude nuclear explosion occurred near 11 p.m. on 9 July 1962. The 1.4 megaton explosion occurred at about 400 km altitude over Johnston Island nearly 800 miles away. Within a second the sky was lit to daylight conditions, and it stayed lit for many minutes thereafter. At electromagnetic frequencies a radar like the one at Cape Cod attempting to search through the area of sky behind the explosion would be unable to do so for tens of minutes. Thus, such an explosion could be used to effectively "screen" an incoming attack from an early warning radar.

---

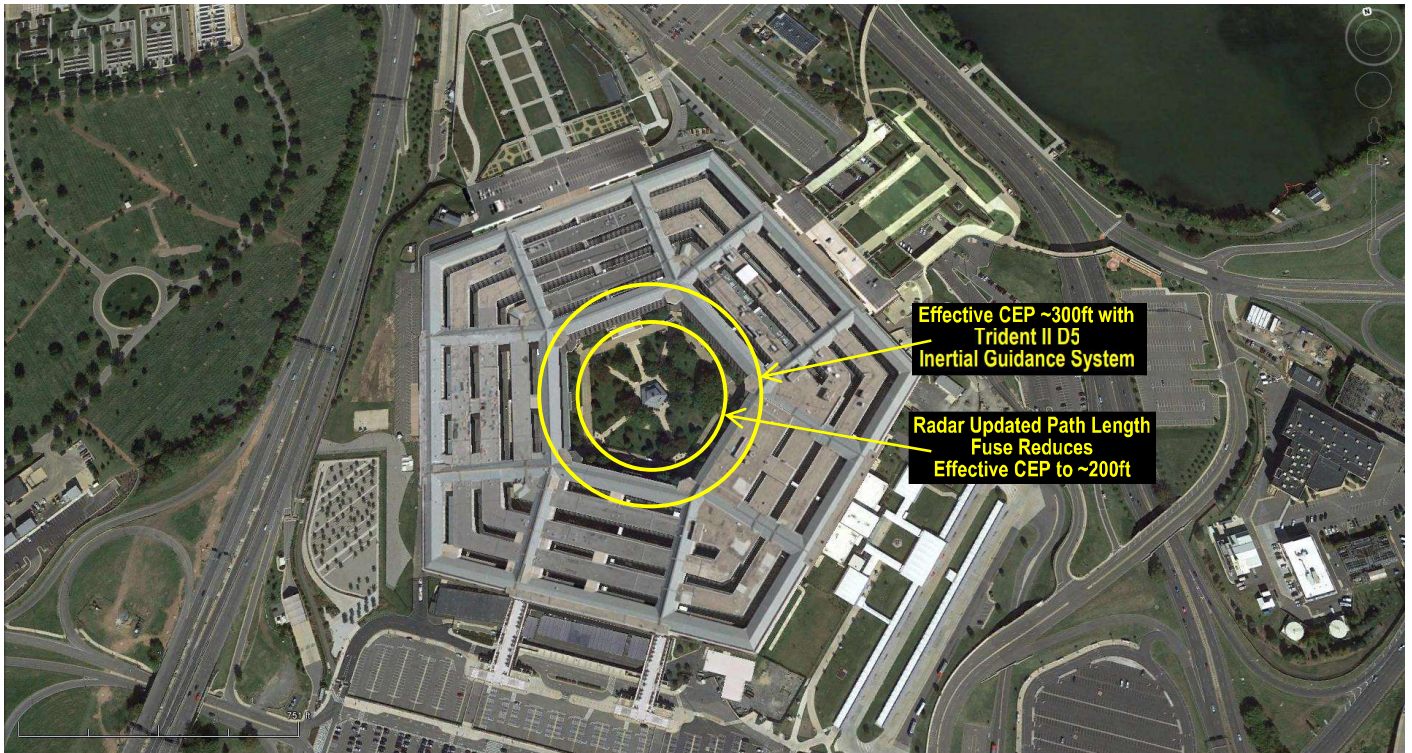
## Attack on Washington DC and Other Major Cities

---



# Ballistic Missile Accuracy Improvements Currently in Progress in the US Nuclear Force Modernization Program is Drastically Increasing the Killing Power of Each US Warhead

---



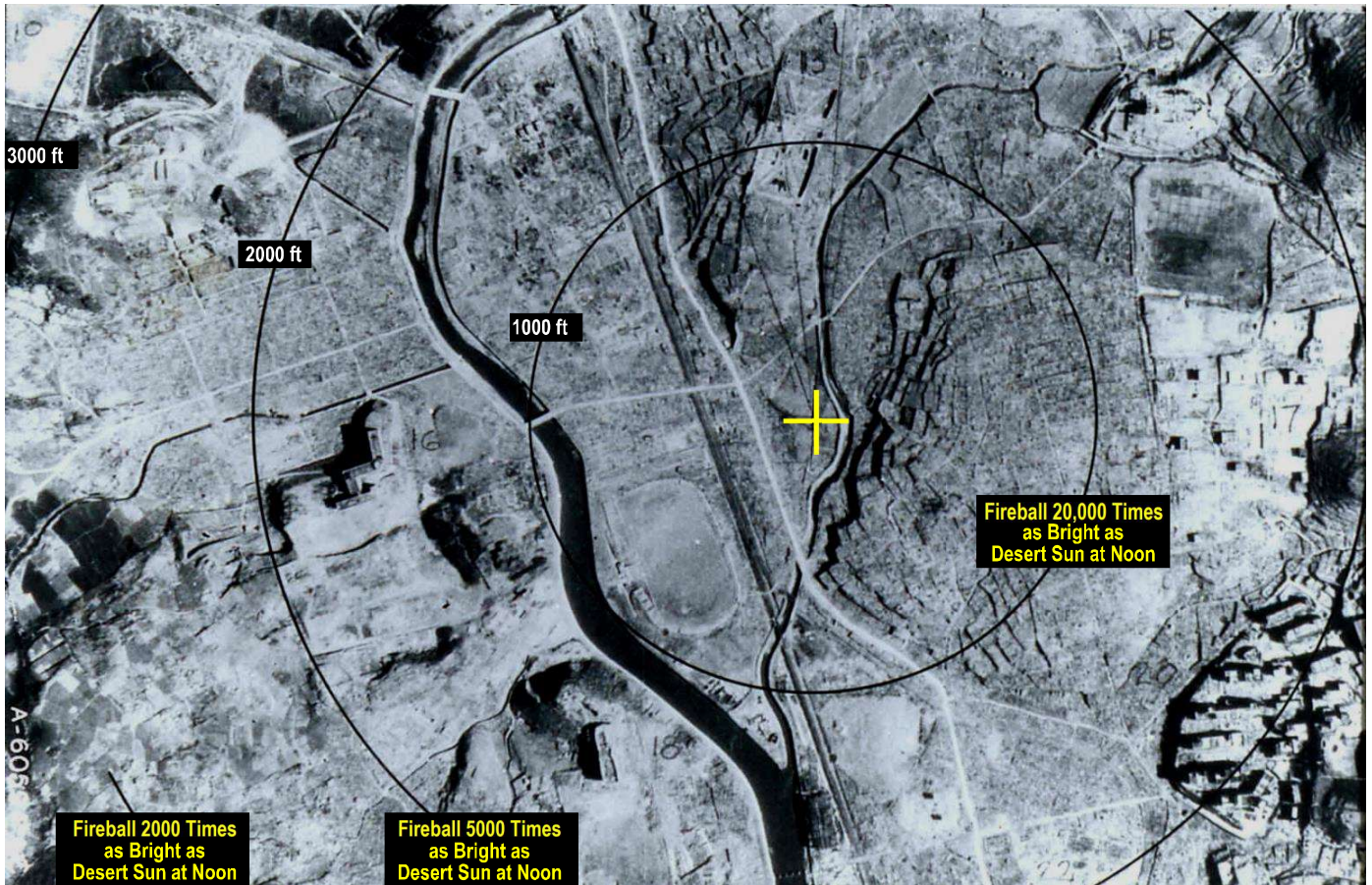
## Nagasaki, Japan Immediately Prior to Nuclear Attack and “Firestorm” from the Detonation of a 22 Kiloton Bomb on August 8, 1946 (Slide 1 of 2)

---

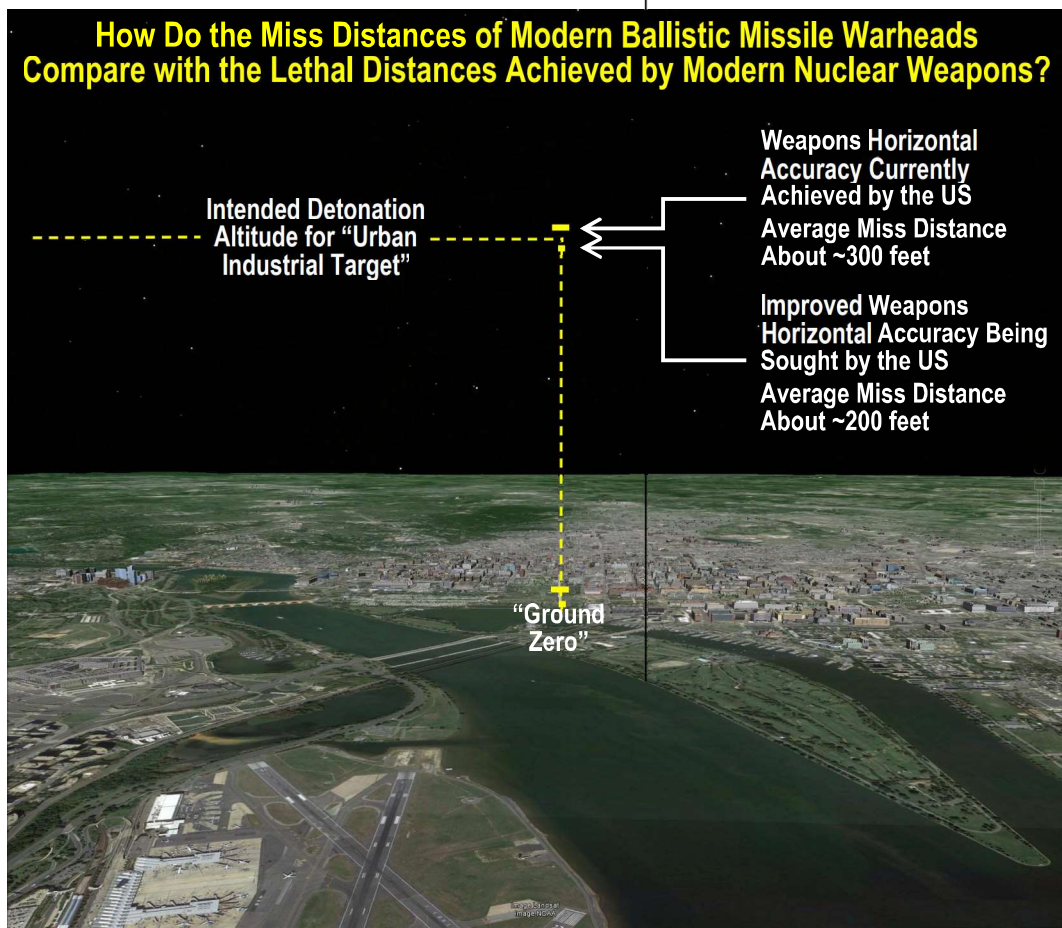




# Nagasaki, Japan After a Nuclear Attack and "Firestorm" from the Detonation of a 22 Kiloton Bomb on August 8, 1946 (Slide 2 of 2)

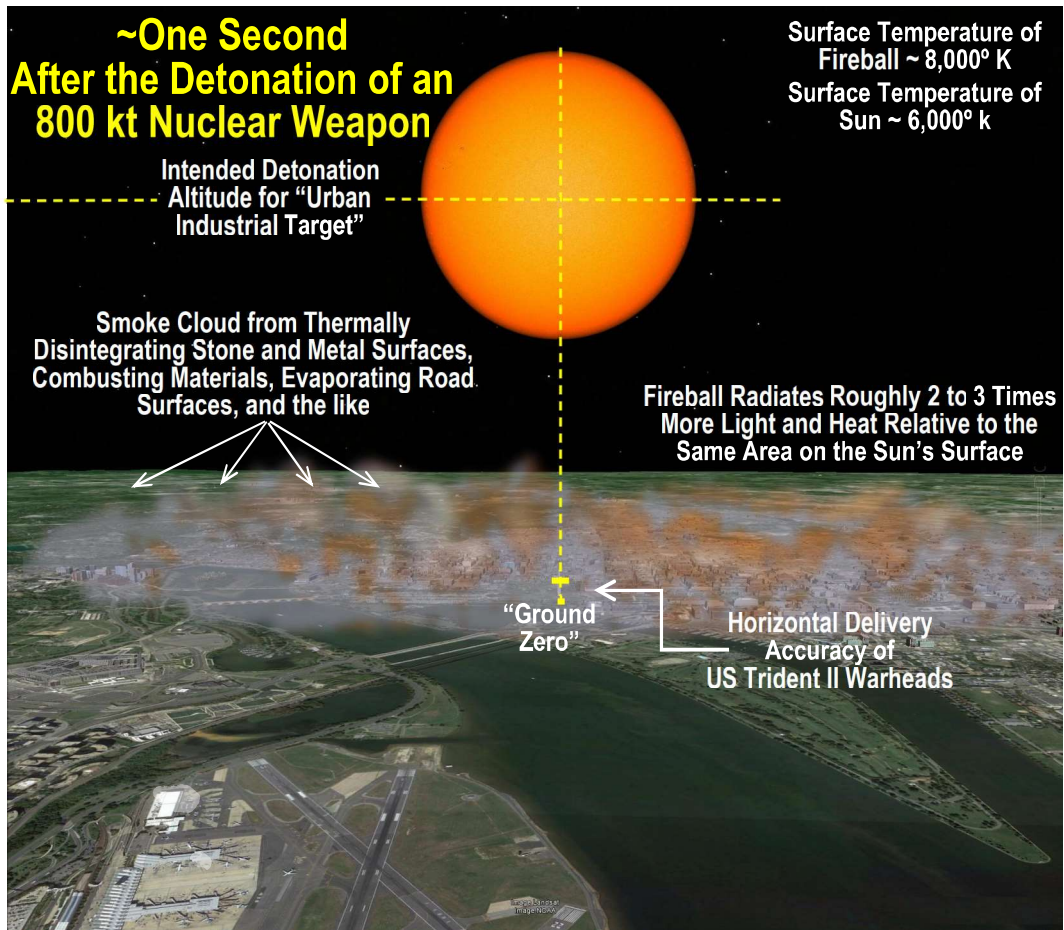


# Actual Consequences of the Detonation of One SS-18 Nuclear Warhead over Washington, DC (Slide 1 of 5)

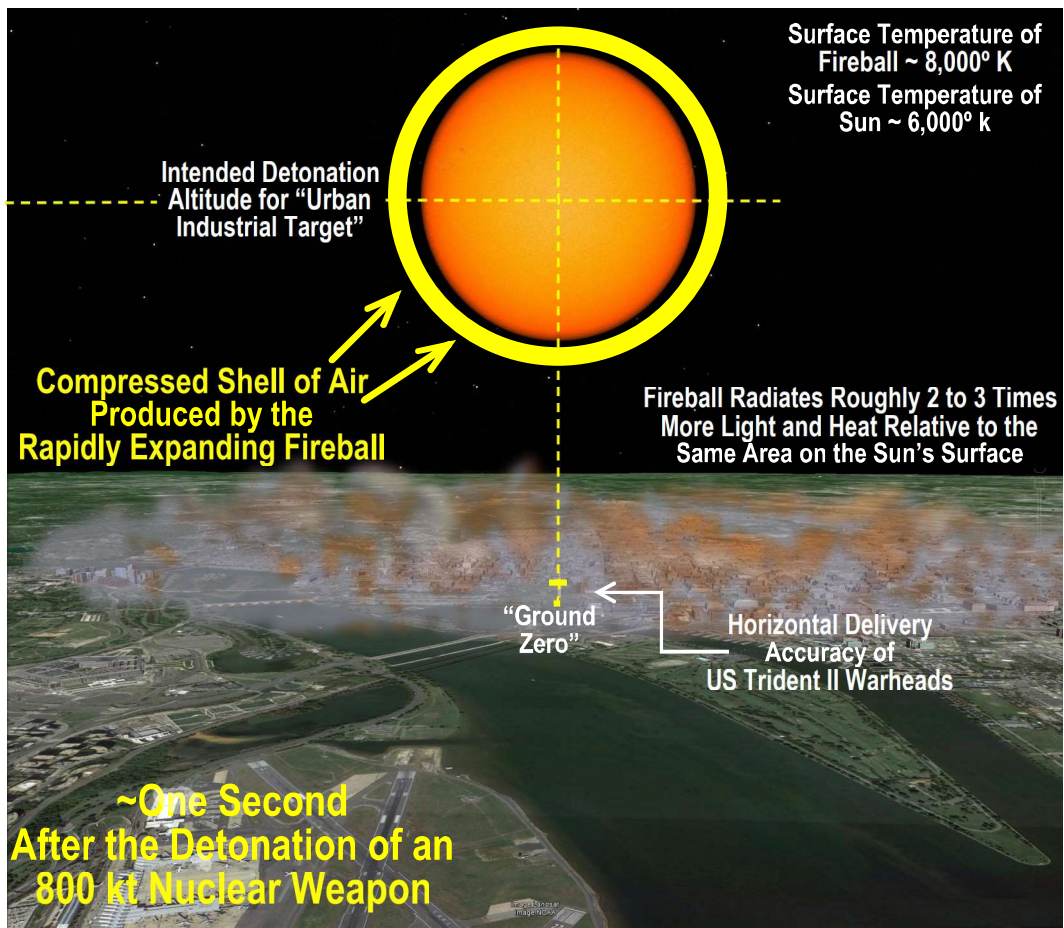




Actual Consequences of the Detonation of One SS-18 Nuclear Warhead over Washington, DC  
(Slide 2 of 5)

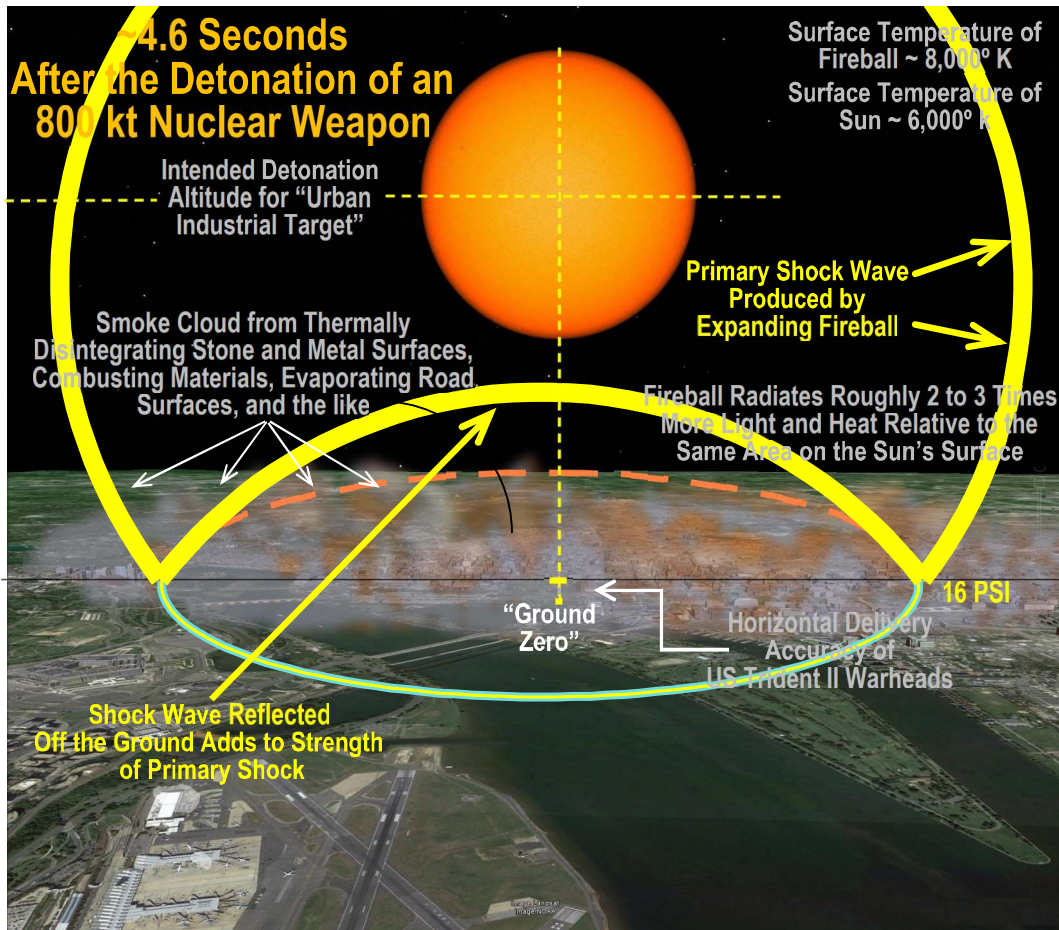


Shock Wave Breakaway from Fireball After the Fireball Reaches Its Maximum Radius  
(Slide 2 of 5)

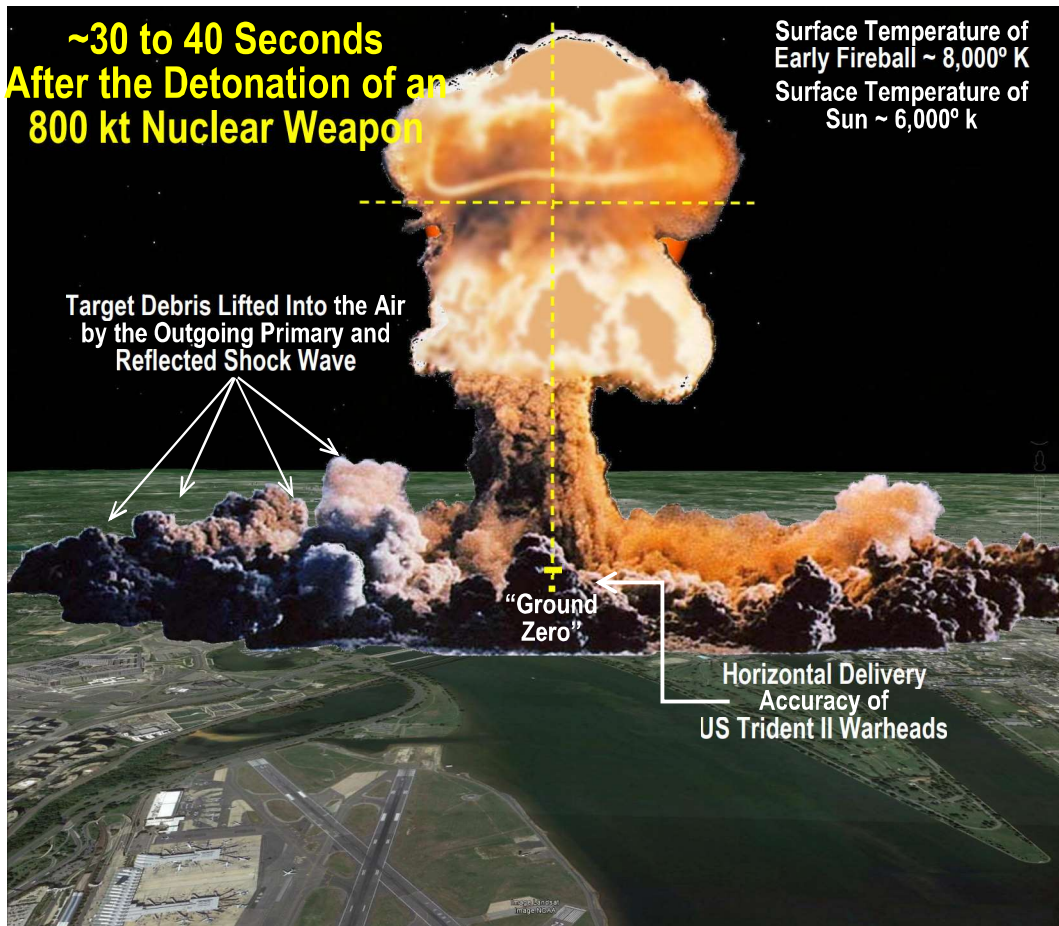




Actual Consequences of the Detonation of One SS-18 Nuclear Warhead over Washington, DC (Slide 3 of 5)

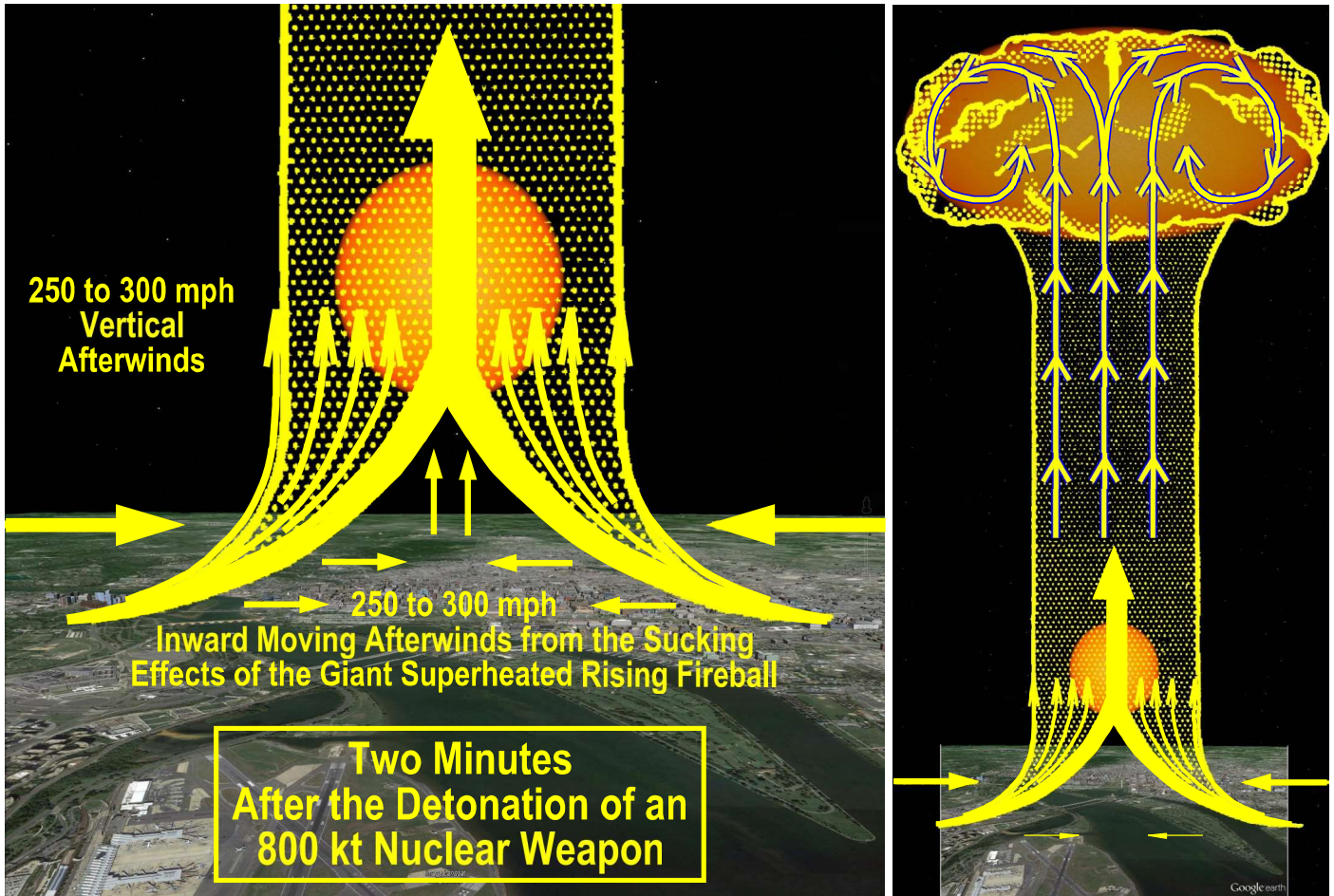


Actual Consequences of the Detonation of One SS-18 Nuclear Warhead over Washington, DC (Slide 4 of 5)





Actual Consequences of the Detonation of One SS-18 Nuclear Warhead over Washington, DC  
(Slide 5 of 5)



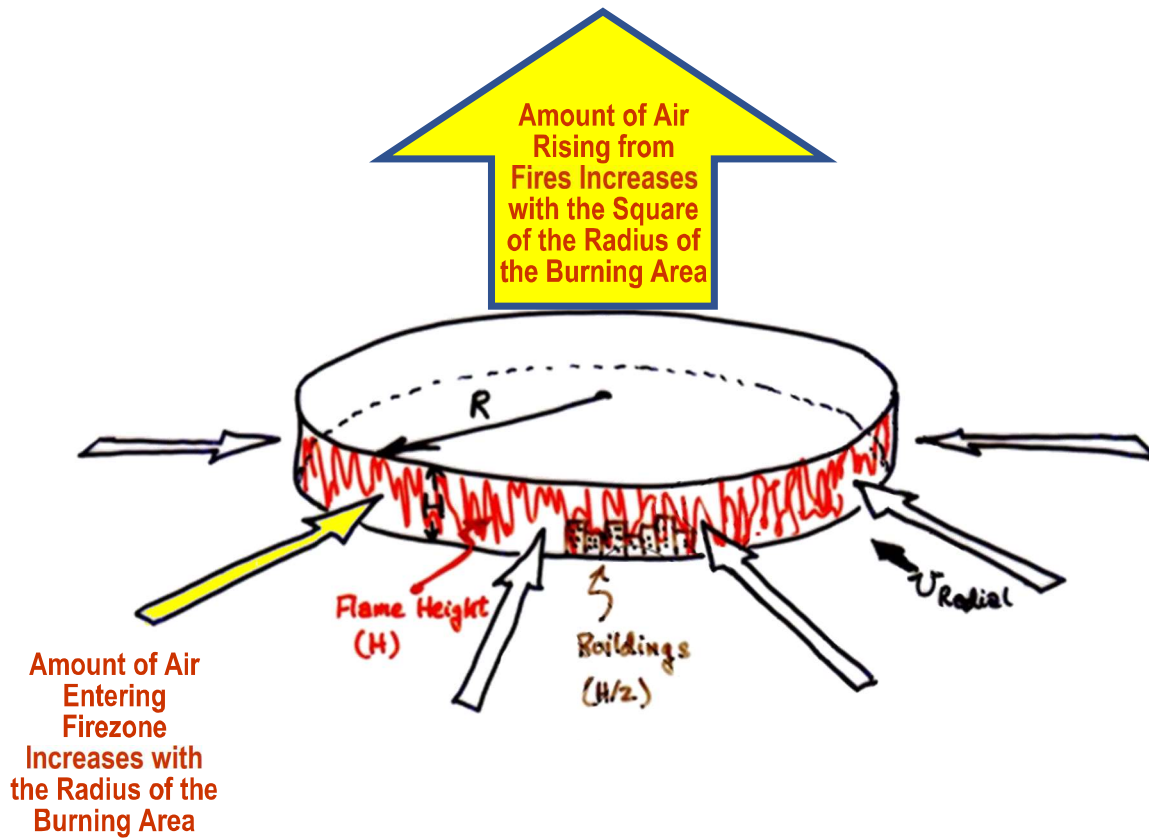
Consequences of a Single Detonation of One SS-18 Nuclear Warhead over Washington, DC  
Roughly 100 to 150 Square Miles Destroyed by "Firestorm" (Slide 1 of 2)





The Wind Speeds and Air Temperatures in a Large Area Fire Will Increase With the Radius of the Fire Zone – Wind Speeds of Hurricane Force and Air-Temperatures Above the Boiling Point of Water Are to be Expected for 3 to 6 Hours Following an Attack

---



Victim of the Hamburg Firestorm Who Attempted to Flee the Fire Zone Rather Than Stay in A Shelter

---





---

### Some Thoughts for Debate

---

- We need constantly be aware of the fragility of early warning systems
- the consequences of errors leading to nuclear escalation need to be factored into the political system
- Biden has done a very good job of signaling that he intends to avoid confrontation
- Putin's threats or another matter:
  - He is giving the appearance of being unstable that could be true, but it could also be intentional
  - keep in mind that he is very smart –
- We should not let assessments of the man's morality influence our thinking
- We need to work hard and cooperatively strengthening information systems and sensors so as to reduce the chances of accidents
- if Russia attacked us by mistake there will be no victory for anyone.
- Conventional anti-vehicle and anti-aircraft technologies have already demonstrated that an appropriately armed nation could destroy any conventional invading ground force