INSTITUTE FOR SCIENCE AND INTERNATIONAL SECURITY

Update on Assessing the Detonation at the Natanz Iran Centrifuge Assembly Center: New High Resolution Satellite Imagery Refines Details on the Explosion and Fire

By David Albright, Sarah Burkhard, and Frank Pabian

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We would like to first explain why we are issuing another report on the Natanz explosion. As we continue to obtain and receive newer and more detailed information, we believe that we are gaining a clearer understanding of this event, leading us to update our analyses. The difficulty lies in determining where exactly the detonation occurred and its source characteristics, given the determination of Iran to so far keep the public in the dark[1] as well as the initial shortage of high-resolution overhead imagery. Today's analysis represents a new possibility, described below, deriving from the new capability to create 3-D stereoscopic pairs with those overhead images taken at different viewing angles, allowing additional details to be ascertained. We welcome comments and any additional information that can get us closer to the full truth of the matter.

Immediately subsequent to our most recent satellite imagery report on the damage observable at the Natanz Iran Centrifuge Assembly Center (ICAC), which described a possible crater located at the northwest corner of the ICAC,[2] we became aware that Maxar had just released a very high resolution satellite image from July 8, 2020. With that new image, the Institute was able to combine it with previous commercial satellite images from the 4th and 5th of July in a 3-D stereoscopic pair, whereby it was then possible to detect the presence of a below grade feature that was not previously determinable from the individual 2-D images when viewed separately. Figures 1 – 3 show the results.

That apparent below grade feature appears to extend to a small crater-like feature that is the likely center-point of the explosion that destroyed the ICAC and part of the annex, and created an outward radiating pattern of destruction (see Figure 3). We are also more confident in suggesting that this center point was most likely situated just inside the former corner walls of the ICAC. Moreover, what we had previously perceived in 2-D as a possible crater, now appears

[1] "Iran admits fire at Natanz nuclear site set back its centrifuge program," *Times of Israel,* July 5, 2020, https://www.timesofisrael.com/iran-admits-fire-at-natanz-nuclear-site-caused-considerable-damage/

[2] David Albright, Sarah Burkhard, and Frank Pabian, "Damage to the Iran Centrifuge Assembly Center (ICAC) at Natanz," *Institute for Science and International Security,* July 8, 2020, https://isis-online.org/isis-reports/detail/damage-to-the-iran-centrifuge-assembly-center-icac-at-natanz/

in 3-D more like a rubble pile created by the blast (where about 25 percent of the adjacent annex was destroyed).

As a result of this new assessment, whatever the causal factor for the detonation, it now appears to have most likely initiated just inside the northwest corner of building. Moreover, a case can now be made that the explosion and fire could also be associated with a possible below grade pipeline, such as that used for natural gas delivery.

If the event was associated with a natural gas line explosion, then the possibilities for causation have expanded from our earlier analysis to include:

- Purely accidental;
- An explosive device was planted that triggered an explosion and fire; or
- Some cyber-based attack could have led to a leak that later ignited.

Figure 1. High resolution satellite image of the Iran Centrifuge Assembly Center prior to the explosion, dated June 28, 2020, released by Maxar, via Christiaan Triebert of the *New York Times* on Twitter, July 8, 2020. Satellite image ©2020 Maxar Technologies.

Figure 2. July 8, 2020 post-explosion high resolution satellite image of the ICAC, annotated by the Institute, image released by Maxar, via Christiaan Triebert of the *New York Times* on Twitter, July 8, 2020. Satellite image ©2020 Maxar Technologies.

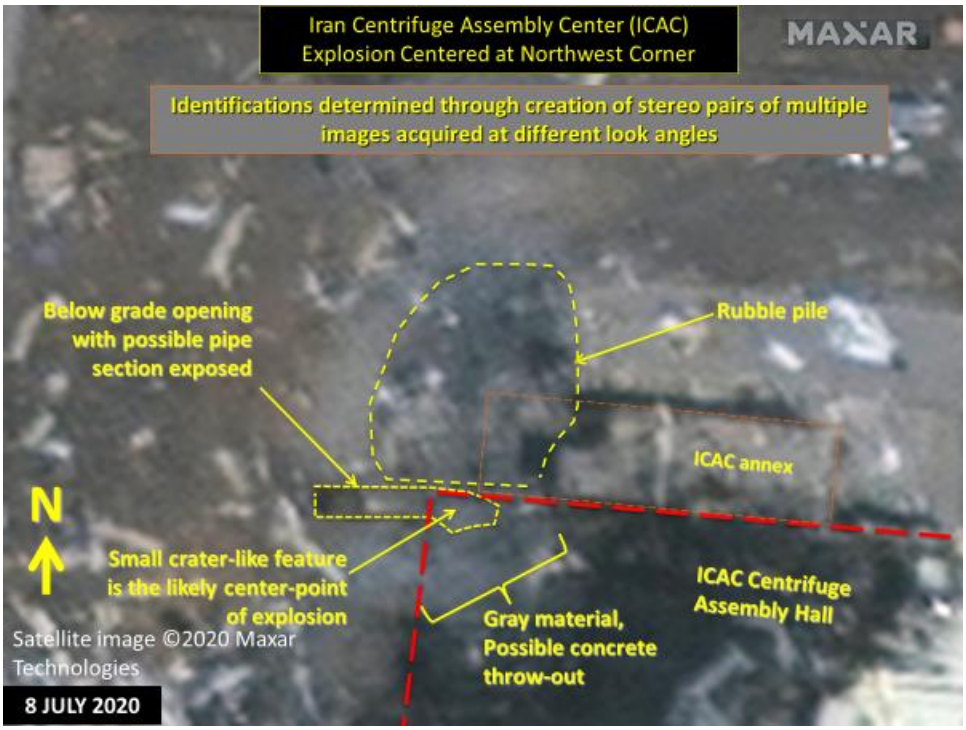

Figure 3. July 8, 2020 post-explosion satellite close up of explosion site, using an image released by Maxar, via Christiaan Triebert of the *New York Times* on Twitter, July 8, 2020. Satellite image ©2020 Maxar Technologies.