

Cutting Through the Fog on 'Possible Military Dimensions' to Iran's Nuclear Programme: Identification of Vehicles at Parchin site

By Robert Kelley

On 14 July 2015, the Joint Comprehensive Plan of Action (JCPOA) was agreed after more than two years of intensive negotiations between France, Germany and the United Kingdom (E3), the European Union (EU), China, Russian federation and the United States of America (+3), E3/EU+3 and Iran, on ensuring the exclusively peaceful nature of Iran's nuclear activities. On the same day, the International Atomic Energy Agency (IAEA) and Iran agreed on a work plan called the Road-map for the Clarification of Past and Present Outstanding Issues regarding Iran's Nuclear Programme. Under the Road Map, the IAEA and Iran also concluded separate arrangements to address the issues of: (1) possible military dimensions to Iran's nuclear programme as set out in the Annex to the November 2011 IAEA report; and (2) of activities at Parchin, a large military-industrial factory in Iran.

Over past years, since November 2011, the issues of PMD and Parchin have been the subject of many analyses in the public domain, some which instead of clarifying the underlying issues have muddied waters. In a series of assessment, Robert Kelley, Associated Senior Research Fellow with the Disarmament, Arms Control and Non-Proliferation Programme at SIPRI, who has experience in nuclear intelligence and remote sensing, respectively at the U.S. Los Alamos National Laboratory and the U.S. Department of Energy, discusses some of the key issues and misperceptions concerning PMD and Parchin. These assessments are designed to acquaint the public with the truth and the application of the scientific method to information analysis in the service of peace and security. While some are trying to make the problem seem difficult, competent and experienced intelligence analysts use many tools to understand information and paint a clear picture. These tools include measurements of objects, categorization of objects, historical imagery over a relevant period of time, and, of course, common sense plus experience. The fourth of these assessments looks at allegations regarding the presence of vehicles at a particular site at Parchin.

Identification of Vehicles

A number of reports about Parchin have involved vehicles, whether cars or specialized trucks, where they park, their colour and type. While this might seem trivial at first, vehicles unfortunately are being used to present further poor analysis of the site.

An advantage of a large site like Parchin is that there are hundreds of vehicles and many of them can be identified by their shapes and sizes. Military analysts look at military vehicles, ship and planes and use them to understand the order of battle. We can do the same with cars and trucks at Parchin.



This is a parking lot, most likely for employee cars taken on a workday. One can even see the parking lines on the ground. This lot is imaged frequently and we even see that the driver of one car often parks far off to the side like we often see when people want to avoid parking lot dings. Cars are about 4 metres long.



This is the same parking lot on a Friday, a holy day and holiday in Iran. There is only one car in the parking lot.



Cars and heavy equipment in this image of a new building under construction for several years at an unrelated area at the Parchin Ammunition Plant. The big vehicles are 6 – 7 metres long and look very different from cars parked at the building of interest.



There was a large chemical explosion in a distant part of Parchin in 2014. Dump trucks for the clean-up are very obvious and much larger than cars.

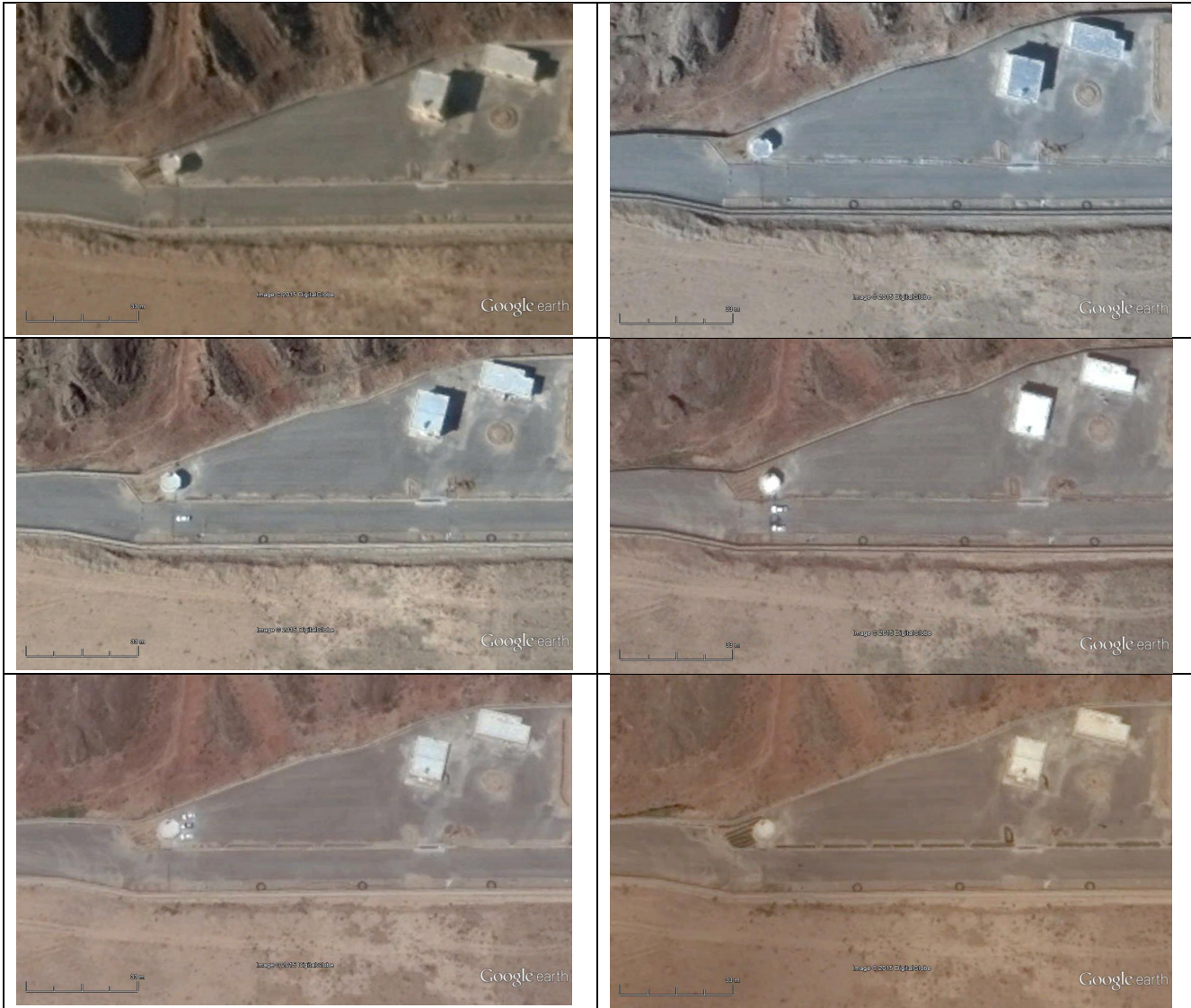
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This is an earth mover at work. Notice the trail of fresh earth behind it. It is about 7 metres long and looks nothing like a car.

This brings us to the compound of intense interest. Here are eight images, all taken in 2015, that show a very consistent pattern of zero cars or a few cars. No trucks. No earth movers. No earth moving activities are observable.





Copyrighted imagery taken in mid-to late July recently published in a public domain analysis shows exactly the same pattern. Nothing whatsoever is happening of any kind or scale of the slightest interest.

Conclusion: This assessment has shown that satellite imagery analysis is a sophisticated and exacting science, care needs to be exercised to correctly interpret the images taking into account many different but related factors, and it does the public a disservice when some public domain analyses either misinterpret and/or misunderstand imagery leading to erroneous assessments with major public policy impact.