Detected infrasound signals in Isumi, Japan - the volcanic explosion of Sakura-jima and the rocket launching -

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The infrasound observation system is installed in Isumi, Chiba-prefecture, Japan (approximately 60 km SE of Tokyo) as the component of the International Monitoring System for CTBT. It had been deployed on November 2004. It comprises a six-element array. Five elements of the array are located as a pentagon with sides approximately 1.2km long. The sixth element is located within the pentagon-shaped array.

Until now, some interesting infrasound signals were observed. One kind of them might be the infrasound wave generated by the volcanic explosion of Minamidake, Sakura-jima. Explosions of Sakura-jima have sometimes occurred since the observation system had started to run. When the large explosion occurred, infrasound signal was observed at Isumi and its onset-time and the direction was coincided with the event. The distance between Sakura-jima and the observation site is approximately 1000 km. Travel time of infrasound waves was estimated approximately one hour. Some infrasound wave-trains which came from the direction of Sakura-jima were detected after about one hour from the origin time of explosions.

Another kind of interesting signals was the signal generated by the rocket launched. The Rocket No.9 (H-IIA F9) was launched from Tanegashima Space Center of the Japan Aerospace Exploration Agency (JAXA) on 18th February, 2006. Three independent wave-trains, which had a spindle-shaped envelope respectively, were observed during 40 to 60 minutes after liftoff. The second and the third phases might be the signal generated in the initial stage of liftoff and the existence of these separated phases might indicate the existence of different ray path. And the first phase might be the signal corresponded with falling down some parts of rocket removed.

In this presentation, some remarkable infrasound signals including above are introduced and discussed.