KATOL METEORITE SHOWER (FALL), VIDHARBHA AREA, MAHARASHTRA

Katol a tehsil of Nagpur District Maharashtra has witnessed meteoric impact on 22.05.2012 between 2.00 to 2.30 pm of the day with very loud sound and meteorites hitting the surface of the earth. In order to ascertain the meteoritic impact and collect the meteorite samples, a team of four members headed by Shri. Binod Kumar, Deputy Director General & HOD, GSI, Central Region along with Dr. G. Suresh, Director, Petrology, Shri. S. H. Wankhade and Dr. Mohamed Shareef, Geologists, GSI, Central Region visited Katol on 23.05.2012.

With the interaction of tehsildar, reporters and local peoples it is found that, there was a loud noise heard followed by meteorite fall without any damage to life or property. During the visit four meteorite samples from four different locations were collected from the local persons within a radius of 2 sq. km. The places where meteorite samples collected are (1) Lakhsmi Nagar – sample collected by Shri. Nathoji Ramkrishna Charde, (2) IUDP Layout – sample collected by Shri. Govinda Muralidhar Mahajan, (3) Khutamba Road – sample collected by Shri. Javed Razzak Shaik and (4) IUDP Layout near Nagpur Road – sample collected by Shri. Pundlik Kashiram Shivarkar, a nomadic.

All the meteorites collected are of different sizes and shapes, however, their composition is similar. Sample collected at Lakshmi Nagar is the biggest among them i.e. weighing 673.5 gms. Surface is completely burnt showing dark brown roasted colour with sub-rounded edges. The surface is smooth with minor pits. All these samples when collected were very cold. Location wise description of the sample is as given below.

1. Lakhsmi Nagar, Katol (Lat: 21° 16’ 09” , Long: 78° 34’ 49”) (Toposheet No. 55 K/11)

The meteorite recovered at this site is polyhedral in shape and biggest among the samples collected. The dimension of the sample is 9.5 cm × 9 cm × 5.5 cm. The surface of the sample is burnt showing dark brown coloured thin crust and effect of sudden cooling (chilling). Thickness of the burnt layer is approximately 0.5 mm. Pits of different sizes i.e. from 0.5 cm to 2 cm, regmaglypts with a few fine vesicles are seen on the surface especially more on the concave side of the sample. It shows typical meteorite character with convex face one side pointing towards earth surface and concave surface with regmaglypts pointing towards sky. Striations are noticed at side face of the meteorite indicating the friction and trajectory path. Edges are smooth and sub-rounded to rounded. Some portion of the sample which was broken already suggests that it is a stony meteorite (Chondrite) dominated by silicates (olivine and other silicates) with little iron. Fine network of iron oxide vein- lets are also observed in the sample. Ubiquitous Iron nodule (globule) of 0.5 cm in diameter is also recorded. The weight of the sample is 673.5 gm with specific gravity of 3.36 gm/cm^3.

Dimensions of the impact on the earth surface is also recorded i.e. 13 cm × 10.5 cm × 4.5 cm (depth). The longest axis of the impact is also measured which gives N53°E direction.

2. IUDP layout, Katol (Lat: 21° 15' 58" , Long: 78° 35' 42") (Toposheet No. 55 K/11)

The meteorite sample shows polyhedral shape and dimensions 4.5 cm × 4 cm × 4 cm. the surface of the sample is completely burnt showing dark brown colour with thin crust of the size of 0.5 mm.. Surface is smooth with rounded edges. It is a typical stony meteorite dominated by silicates with little iron on the exposed surface and iron-nickel enriched core. Fine veinlets of iron oxide along microfractures within the sample are noticed. Dimension of the pit caused by the impact on the earth surface is 8 cm × 6 cm × 10 cm (depth). The clayey soil at the pit mouth shows some effects of hardening. Neither any burning nor any sign of desiccation in the clayey soil could be noticed. This sample was already broken in two pieces by the collector of the sample. The weight of the sample is 74.3 gm with specific gravity of 4.12 gm/cm^3.

3. A tin shed in the agricultural land in Khutamba Road, Katol (Lat: 21° 15' 15" , Long: 78° 35' 34") (Toposheet No. 55 K/11)

The sample is oval in shape with dimension of 5.5 cm × 4 cm × 3 cm. The surface of the sample is completely burnt showing dark brown colour. Composition of the sample is difficult to explain as the fresh surface is not exposed. However from the external appearance it looks similar to other meteorite samples i.e. stony meteorite. The weight of the sample is 74.40 gm with specific gravity of 3.471 gm/cm^3.

The impact of the meteorite is very prominent, where it has pierced the metallic tin shed creating a hole of dimension 5.5 cm × 4 cm × 3 cm and on the concrete slab on the ground a depression of 0.5 cm depth is recorded with dimension of 5 cm × 4 cm × 0.5 cm. The angle of hitting of the meteorite sample from the tin roof to the ground is also measured which gives 80° due SE. The longest axis of the impact is also measured which gives ESE direction.

4. IUDP layout near Nagpur Road, Katol (Lat: 21° 15' 46", Long: 78° 35' 54") (Toposheet No. 55 K/11)

The meteorite sample shows polyhedral shape and dimensions 4.5 cm × 4.3 cm × 3 cm. The surface of the sample is completely burnt showing dark brown colour with thin crust of the size of 0.5 mm. Surface is smooth with rounded edges. No pits are present on the surface of the sample. It is a typical stony meteorite dominated by silicates (olivine and other silicates) with little iron on the exposed surface. Fine veinlets of iron oxide within the sample are noticed. At present impact pit

structure on the ground is not seen. This sample was already broken in pieces by the collector of the sample. The weight of the sample is 44.77 gm with specific gravity of 3.534 gm/cm^3.

Summary

An incidence of meteoric shower is occurred in the Katol area on afternoon of 22.05.2012 with a loud noise heard between 2.0 to 2.30 pm. Samples were collected from four localities in and around the Katol city. Samples collected are of stony meteorites with varying size, shape and dimensions with typical dark brown burnt surface. Compositionally these meteorites are dominated by silicates with little iron. There is very good chance of getting meteorite samples from other part of the Vidarbha area between Akola and Nagpur as huge sound with very bright and dazzling light has been noticed between Akola and Nagpur by many peoples in a stretch of around 150 km in ENE-WSW direction.

Stony Meteorite showing concave face with pits, Lakshmi Nagar, Katol, Nagpur District, Maharashtra

Broken stony Meteorite showing the fresh surface, IUDP Layout, Katol, Nagpur District, Maharashtra

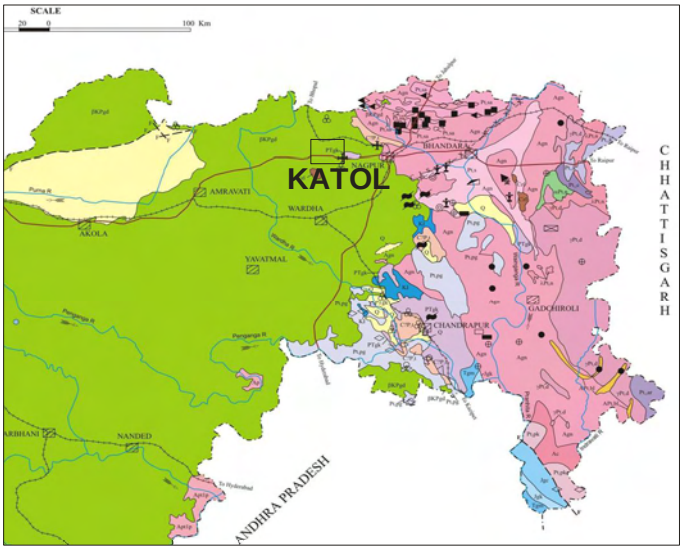
Impact structure on soil due to meteoric fall in IUDP layout, Katol, Nagpur District, Maharashtra

Impact of meteorite fall led to piercing and twisting of tin shed in Khutamba road, Katol, Nagpur District, Maharashtra

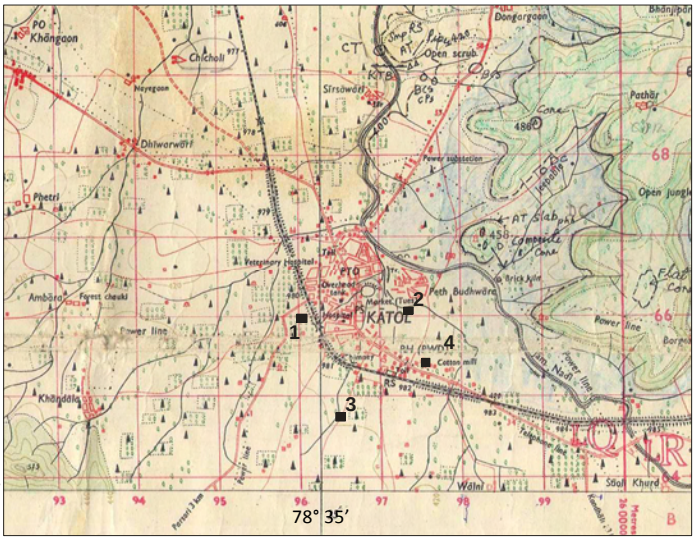
Shri. Binod Kumar, DDG. & HOD, GSI, CR interacting with local administrative authorities, Katol

Shri. Binod Kumar, DDG. & HOD, GSI, CR explaining about meteorites to local journalist in Katol

Team of Geoscientists – (L-R) Dr. Mohamed Shareef & Shri. S. H. Wankhade Geologists, Shri. Binod Kumar, DDG & HOD, GSI, Central Region, Nagpur and Dr. G. Suresh, Director, Petrology who collected samples. Dr. A. K. Chatterjee, Director, PSS-II is also seen to the extreme right in photograph.



Key map showing Katol, Nagpur District, Vidarbha



Location of the meteorite occurrences in and around Katol

1. Lakshmi Nagar, 2. IUDP Layout, 3. Khutamba Road & 4. IUDP Nagpur Road

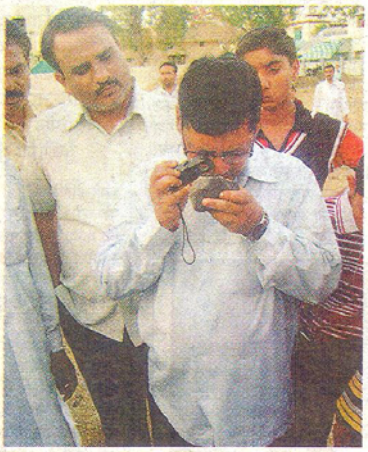
8 | नवभारत | नागपुर, 24 मई, 2012

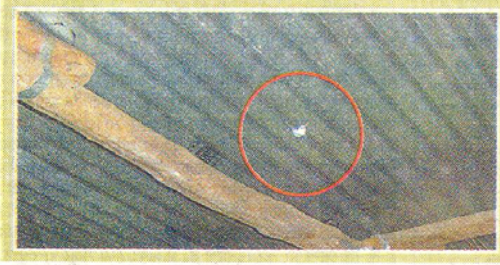
काटोल परिसर में गिरे उल्कापिंड के टुकड़े

जांच के लिए भेजेंगे कोलकाता, नागरिकों में दहशत

आशीष मक्कड

काटोल. नगर व आसपास के क्षेत्रों में उल्कापिंड गिरने की जानकारी मिलते ही भूवैज्ञानिक विभाग की टीम ने यहां पहुंचकर जांच की. जांच के दौरान उल्कापिंड के टुकड़े मिले. इससे छत में छेद भी हो गये. वैज्ञानिकों ने उल्कापिंड के उन टुकड़ों को जमा कर उसे जांच के लिए कलकत्ता प्रयोगशाला में ले जाने की बात कही. निरीक्षण के दौरान उल्कापिंड के उन टुकड़ों को देखने के लिए वहां नागरिकों की भारी भीड़ लगी रही. वहीं उनमें दहशत भी देखी गई. मंगलवार को संपूर्ण विदर्भ में जोरदार विस्फोट की आवाज आने के बाद तर्क वितर्क शुरू होकर हलचल मच गई थी. तो दूसरी ओर काटोल परिसर के वाघोड़ा सबकुंड में विमान दुर्घटना की अफवाह से संपूर्ण जिले में हड़कंप मच गया था. उसी समय नगर के कुछ परिसर में आकाश से गिरे काले कलर के जले हुए पत्थर मिले. उन पत्थरों की जांच करने के लिए नागपुर में भारतीय भू वैज्ञानिक सर्वेक्षण टीम को जानकारी दी गई. जानकारी मिलते ही टीम ने काटोल पहुंचकर जांच शुरू की. भूवैज्ञानिकों ने प्राथमिक जांच के दौरान उन पत्थरों के उल्कापिंड होने की पुष्टि की. मंगलवार को दोपहर 2.10 बजे के करीब आसमान से विस्फोट होने की आवाज से संपूर्ण विदर्भ में हड़कंप मच गया था. विस्फोट के कुछ घंटे बाद लक्ष्मीनगर निवासी नत्थू चरडे ने आसमान से पत्थर उनके घर के सामने गिरने की बात कही. इसकी जानकारी भूवैज्ञानिक सर्वेक्षण टीम को दी गई. बधवार को शाम 5 बजे के करीब भूवैज्ञानिक सर्वेक्षण टीम नगर में दाखिल हुई. तहसील कार्यालय पहुंचकर जिन-जिन क्षेत्रों में पत्थर गिरे उन क्षेत्रों की जानकारी लेकर वहां पहुंचकर निरीक्षण किया.





टीन में हो गये छेद

लक्ष्मीनगर निवासी नत्थू चरडे के निवास के सामने आसमान से गिरे उल्कापिंड पत्थर का वजन 750 ग्राम, साइज 9.5 सेमी बाय 10 सेमी आंका गया. उसी प्रकार नगर के खुटांबा रोड पर गाय के तबेले में आसमान से टीन को चीरते हुए उल्कापिंड का एक टुकड़ा गिरा. इसकी जानकारी खेत मालक व प्रत्यक्षदर्शी जावेद रज्जाक शेख, रेलवे स्टेशन निवासी ने सर्वेक्षण पर आयी टीम को दी तथा वह उल्कापिंड का टुकड़ा उन्हें बताया.

टुकड़ों में बंट गया

आयुडीपी परिसर में भी ऐसा ही उल्कापिंड पाया गया. यह उल्कापिंड आयुडीपी निवासी गोविंदराव उर्फ बाला महाजन ने देखे. उन्होंने उल्कापिंड के 2 टुकड़े काटोल के तहसील कार्यालय में तहसीलदार राजीव शक्करवार को लाकर दिये. टीम के उपमहानिदेशक विनोद कुमार, निर्देशक शैवकीय विभाग सुरेश, भूवैज्ञानिक संजय वानखेडे, मेहमूद रसिक ने चर्चा के दौरान बताया कि स्टोनिक सर्वेक्षण उल्का पिंड बड़ा पत्थर आसमान से नीचे गिरते हुए टुकड़ों में बंट गया. आसमान से वह उल्कापिंड जलते हुए जमीन पर गिरा जिससे वह कई टुकड़ों में बंट गया. वह पूरी तरह से काला दिखाई दे रहा था. नगर के लक्ष्मीनगर, आयुडीपी और खुटांबा रोड पर गिरे पत्थर, उसी प्रकार के कई पत्थर गिरने की आशंका भूवैज्ञानिक टीम ने जतायी.

भूकम्प का हल्का झटका

नगर में उल्कापिंड के टुकड़े गिरने के बाद भूकंप का हल्का झटका लगने की जानकारी भी मिली है. उल्कापिंड के टुकड़े जिन क्षेत्रों में गिरे उन क्षेत्रों में 2.32 मीटर क्षेत्र तक भूकंप का हल्के झटके महसूस किये गये. रिक्टर स्केल पर इसकी तीव्रता 2.1 होने की बात कही गई. जांच टीम के अधिकारियों ने बताया कि उल्कापिंड के उन टुकड़ों को जांच के लिए कलकत्ता की प्रयोगशाला में ले जाया जायेगा.