Since, from the whole Earth, only 33 Pallasite-finds (and 2 falls) have been described, this is a strong indication that the new specimens are part of the well-known Imilac fall.

The site of the old crater-like excavation was also visited. In the 'splinters area' about 1 kg of minor fragments (0.1 to approximately 250 grammes were collected. A few particles were found up to 1,000 m north-east of the 'crater'. Otherwise, we can confirm Buchwald's statements as to the shape and extent of the area. We estimate that it still holds of the order of 1,000 kg of meteoritic iron.

The Imilac Strewn-Field

The existence of the splinters area indicates that a large chunk of the meteorite suffered a violent break-up. This must have happened at a late point of the trajectory through the atmosphere. Its mass exceeded, by far, those which fell further to the south-west. Therefore, it seems likely that the parent body arrived from south-west, rather than opposite. The splinters area is approximately aligned with the new find locations, giving a further argument for their association. Measured from north over east, the azimuth of the combined strewn-field is 47°+/–3°.

The new finds show that the strewn-field is at least 8 km long and about 1 km wide. It cannot be excluded that some of the meteorites collected a long time ago were found in the 'new' area. We did, in fact, notice a small number of minor holes from where it is conceivable that specimens (in the 10-kg class) have been picked up. Indications are that the strewn-field is even longer than mentioned. This topic, and other aspects of the Imilac fall, are discussed in a forthcoming thesis work by E. Martínez, Universidad del Norte. The total weight of recovered material is now about 560 kg. To this adds the estimated 1,000 kg of small meteorite particles still left in the top-soil. Although impressive, at least one other Pallasite find is larger. That at Brenham, USA, had a mass of 4.5 tons (Nininger, 1957, Peck, 1979). It too suffered violent fragmentation.

Asteroidal Origin for Pallasites

Pallasite meteorites form a rather homogeneous group, clearly distinct from the other type of stony-irons, the mesosiderites. They may hold clues to the origin of solar-system bodies. Their creation is therefore a much debated issue between 'cosmogonists'. One theory says that they formed in asteroids, at the interface between a molten core and a partially molten mantle, rich in olivine silicates (Greenberg and Chapman, 1984). Following the asteroid's colling, the top layer of silicates may have been stripped off, exposing the now contracted and cracked Pallasitic layer to erosion.

The asteroidal origin could, in principle be ascertained by orbital calculation of meteorite falls. This has been done on three occasions (the falls at Příbram, Lost City, Innisfree) but none of the meteorites in question were Pallasites. Ground-based observations may nevertheless help solving the question. By infrared spectroscopy three candidate parent-asteroids have been found: 246 Asporina, 289 Nenetta, 446 Aeternitas (Cruikshank and Hartmann, 1984, Scott, 1984). Their spectra show an absorption band at 1.06 μm, as does olivine in its meteoritic form. Also the general trend of the spectra is consistent with the presence of a metallic phase.

It is rare that asteroids can be associated with one particular type of mineral. Detailed studies of asteroids and comets will, in general, require spacecraft to do "sample-return" missions. Such are, in fact, being considered. But perhaps it is superfluous to include Asporina, Nenetta or Aeternitas in the itinerary: the stuff may already be in our hands . . .

Tentative Time-table of Council Sessions and Committee Meetings for First Half of 1987

May 18	Users Committee
May 19	Scientific Technical Committee
May 20–21	Finance Committee
May 26–27	Observing Programmes Committee, Venice
June 3	Committee of Council, Bruges
June 4	Council, Bruges

All meetings will take place at ESO in Garching unless stated otherwise.

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Pallasite Meteorites

Meteorites can be divided into three classes: Stones, Irons, and Stony Irons. A subgroup of the latter is quite peculiar: an iron/nickel mixture forms a sponge-like structure. Olivine crystals, of cross-section 1 to 10 mm fill out the holes, so that the volume ratio metal/olivine is about 1 : 1. The first such meteorite was found in 1771/72 by the German explorer Peter Simon Pallas, during his travels through East Russia. Pallasite meteorites are quite rare: less than 1 per cent of all falls and 3.5 per cent of all finds belong to this group.

Meteorite Craters

Upon hitting the ground, a large meteorite may form a crater. If the terminal velocity is sufficiently high, the conversion of kinetic energy will lead to the meteorite's instantaneous evaporation. An explosion crater is thereby formed. Smaller masses may form impact craters. 13 genuine meteor craters (or crater fields) are known and some 100 others are considered probable. The largest is the meteorite crater in Arizona, USA, which has a diameter of 1,200 metres. Third on the list is the more than 100,000-year old, 370-m diameter crater at Monturaqui. This is only 60 km from the location mentioned in the article, but unrelated. European probable meteorite craters include the 15-million-year-old, 27-km-diameter Nördlinger Ries structure in West Germany and the nearby 3.5-km diameter Steinheim Basin. There is geological evidence that both are meteoritic, but the proof (meteoritic material) is not yet found. It may long since have weathered away.

Strewn-fields

The hyper-sonic velocity, 15 to 72 km/sec, with which meteorites enter the Earth's atmosphere, creates a shock, which often forces the meteorite to break up. Masses less than a few tons will reach the ground with sub-sonic speed, 100–300 metres per second. Small particles tend to fall along steeper trajectories than heavier ones. This creates a characteristic elliptic distribution pattern, with particle size increasing along the major axis, in the direction of flight. This simple picture holds, if just one event of fragmentation took place. Strewn-fields can reach considerable sizes. The Gibeon-fall at South-West Africa covered approximately 100 by 400 km.

Meteorite Collections

Collections of meteorites exist at many museums. Prominent between these are the museums of natural history in London, Paris, Vienna, and the Academy of Sciences, Moscow. The heaviest meteorite on display in Europe is 'Agpalilik', a 14-ton iron from Greenland, now at the Geological Museum, Copenhagen.