IRAM Newsletter

Contents

Number 42 January 21, 2000

Helicopter accident on the Plateau de Bure

On December 15th, 1999, shortly after 16 hours, a helicopter with five people on board left from the Plateau de Bure with destination Montmaur (to the South of the Plateau). About 30 minutes later it became clear that the helicopter had not reached its destination. Unfortunately, the emergency signal that normally should have been transmitted from the helicopter in case of severe problems, and that would have helped to locate its position, did not go off. This fact together with the beginning of darkness and the rapidly degrading weather conditions made extremely difficult all search and rescue activities which had immediately been started, and which continued throughout the night.

It was not before about 11 hours the next morning that parts of the helicopter were sighted, on the northern side of the Plateau, in the vicinity of one of the pylons (P4) of the téléphérique. When the rescue team finally reached the site in the early afternoon, the terrible truth became clear: all four passengers and the pilot had lost their lives.

Two of the victims, **Gerard CALVET** and **Jean-Claude SEMIOND**, were engineers from the Technical Division of INSU (Institut National des Sciences de l'Univers), and the third, **Marc RAMINA**, was director of the engineering company E.R.I.C. (Études et Réalisations d'Installations à Cables). **David LAZARO**, technician at IRAM, came to the mountain as one of the staff representatives for the discussion of the new French 35 hours/week regulation. **Michel GAUD**, the pilot, had 10 years experience flying rescue missions in the mountains, and had been for several years chief of the S.A.F. base in Vars (Services Aériens Français).

The fact that so many lives have been lost, first in the cable car accident and now in the helicopter crash, in trying to operate and further develop the Plateau de Bure Observatory is raising a large number of questions, and there will be no easy answers.

Since the accident, the activities on the Plateau de Bure have been reduced to the minimum necessary for safeguarding the installations. All observations with the interferometer have been suspended. The telescopes are moved only to avoid sun and wind damage. The receivers have been warmed up. These safeguarding activities are carried out by groups of four, all volunteers, who stay for 7 days or longer, as weather conditions require.

When and how fuller operations can be resumed will be decided not before detailed risk analyses will have been made for several operational scenarios. Only such analyses can give us answers to the question of what technical activities can be supported under the circumstances, and how to solve the transport problem to and from the Plateau de Bure in the nearer future, and in the longer term.

The Plateau de Bure Interferometer has produced excellent science in the past, and we certainly hope that it will do so in the future again. It is too early to say when this will be.

Michael Grewing

INSU/IRAM note

The following is the translation of a note which has been prepared by the CNRS/INSU together with IRAM. The original text is in French. It has been widely distributed to French institutions and to the astronomical community in France.

INSU/IRAM Note to the Wider Astronomical Community On the Helicopter Accident on the Plateau de Bure

IRAM and INSU/SDU are deeply shocked by the helicopter accident which has happened on December 15, 1999, and which has taken the lives of **Gerard CALVET** and **Jean-Claude SEMIOND**, senior engineers in the Technical Division of INSU, **David LAZARO**, technician at IRAM, **Marc RAMINA**, Director of the company E.R.I.C., and **Michel GAUD**, pilot of the enterprise S.A.F. Our thoughts are with the families and we join them in their grief over these terrible losses.

Mr. CALVET, Mr. SEMIOND and Mr. RAMINA had come to the Plateau to examine the state of the existing cable car installations. Mr. LAZARO had come to the Plateau de Bure as one of the representatives of the personnel to discuss, with his colleagues, the implementation of the 35 hours law.

Since the accident of the cable car on July 1st, 1999, IRAM and INSU as part of the CNRS who is the owner of the cable car, had reviewed together all possible modes of access to the Plateau de Bure. Access by a road between Bure and the ski station of Superdevoluy, passing through a so called "window" on the western side of the Plateau ("La Fenêtre"), was one of the alternatives considered. It would require a significant improvement of the conditions at and near the "Fenêtre", but even so it was considered too dangerous in the case of icing conditions and fog, and also because of the risk of avalanches and landslides. A cable car solution was therefore the only one to be retained. The construction of a totally new cable car on the southern side of the Plateau, which is more exposed to wind than the northern side, was found to be too difficult. The solution kept in the end was the reconstruction of a cable car in the previous location on the northern side of the Plateau, starting from l'Enclus.

Still, numerous questions remain to be answered before a new cable car system can be specified: "Are the requirements of IRAM the same as 20 years ago?", "What are the mid-term and long-term plans of the local communities with respect to public access to the Plateau?", "What type of téléphérique shall be built and which fraction of the existing installation can be re-used in a system that aims at maximum safety?".

The technical division of INSU and its engineers will supervise the realisation of the project. The project management must be sub-contracted, and a corresponding call for tenders had been issued. The enterprise E.R.I.C. was chosen and a contract had been signed recently. The first task of the contractor was to make a complete analysis of the existing installation, with a careful examination of the two stations, the pylons, the cables, and the machinery. This work had just started, and the visit to the upper cable car station had been planned in this context. The results from the analysis should serve as basis for a new conceptual design of the cable car. In addition, the results from the still on-going legal enquiry about the cause of the accident in July will, of course, play an important role in defining a new concept. The next step would have been the choice of a constructor. If all had gone well, he could have started the re-construction work at the end of the spring period, and, in a very optimistic scenario, finish it during the fall of 2000.

The engineers from INSU and the director of ERIC had therefore come to the Plateau on the afternoon of December 15. They used the helicopter which is the only means of access since the cable car accident.

After having examined the upper cable car station, they decided to leave the Plateau by helicopter during the afternoon. There was a risk that weather conditions, which had been good at the beginning of the afternoon, would deteriorate later. They were still satisfactory when the helicopter took off at about 16 hours, close to 30 minutes before sunset. Wind velocities were around 40-50 km/h, and a thin cloud layer started to build up on the Plateau with patches of blue sky still being present. The decision to take off was taken by the pilot, who had been for many years the chief pilot at the base of the "Services Aériens Français" (S.A.F.) in Vars. The helicopter took off towards the North, against the wind, and quickly gained altitude to get above the cloud layer. It should then have made a left turn to the South to arrive at its destination in Montmaur, where the sky was completely clear. As was discovered the next morning, the helicopter crashed for a still unknown reason several hundred meters to the North-East, and several tens of meters below the point from which it had taken off, after hitting the cables of the téléphérique.

Immediately after the helicopter accident, IRAM and INSU stopped all on-going activities. All future action must be discussed amongst the three IRAM partners, in particular the conditions under which the observatory can be operated given the current circumstances. As a first measure, IRAM has stopped the observing program, leaving only a small team of four people on the site, which is the minimum crew necessary to keep the installations alive. The receivers have been warmed up, and the antennas are in stand-by. They are only moved once or twice per day to follow changes in wind direction and to keep the reflectors pointed out of the sun avoidance zone. Beyond this, the only other activities foreseen are the monitoring of the telescope drive and heating systems, needed to avoid ice formation on the surfaces, and the general watch over the installations in the control room, hangar, and living quarters. The personnel working at the observatory consists exclusively of teams of volunteers, who have accepted to stay for a minimum of one week on the Plateau. The exchange of teams is foreseen each Thursday, around noon, if weather conditions are favourable. This scheme should reduce the number of necessary helicopter flights to a minimum. The meteorological conditions which must be met before a flight is organised, have been redefined in consultation with the helicopter company to increase the safety margins well beyond the generally accepted ones. The final decision for each flight remains the responsibility of the pilot. The IRAM staff has participated in these discussions. The C.H.S. (Committee for Hygiene and Safety) of both INSU and the CNRS commissions will be kept informed of the measures taken.

All these questions will be analysed together by the IRAM partners, the CNRS/INSU in France, the Max-Planck-Gesellschaft (MPG) in Germany, and the Instituto Geografico Nacional (IGN) in Spain, to decide which course of action to take from here onwards. An extraordinary meeting of the Executive Council of IRAM will be convened for this purpose.

Concerning the helicopter accident, official enquiries are currently under way: everything that could shed light on the cause of the accident is collected, including interviews of witnesses who have followed the events before and after the crash. Once these enquiries are completed, the judicial authorities will decide whether or not to open a legal case or to close the matter if no penal liabilities are involved.

This is all that can be said for now. We will keep you informed when new facts become available as well as about the outcome of the IRAM Council meeting. We wish this information to be distributed as widely as possible.

The IRAM Newsletter is edited by Michael Bremer at IRAM-Grenoble (e-mail address: `bremer@iram.fr`). In order to reduce costs we are now sending paper copies of this Newsletter to astronomical libraries only. The IRAM Newsletter is available in electronic form:

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