objectives and by November 2015 draw up a report which would be represented in the incoming comprised reduction objective

- An agreement model on the basis of preparation in Lima for the world conference in Paris to be placed in December 2015.

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Philae lands on Comet *"Tschuri"*

Thomas Reiter Director for manned space journey and management of the European Space Journey Association (ESA) marked with figure 50-50 the success prospect of Rosetta Space Mission. On the last Wednesday, 12 November 2014 shortly after 17 hours (MEZ) it was then officially announced for the first time in the history of space journey a space probe landing on a comet had been successful. The journey of 67 p/Churyumov-Gerasimenko in short Tschuri had lasted for ten years. The comet measured in diameter approximately 4 km and moved with about 135000 km/hr.

The comet was discovered in 1969 by Russian astronomers Klim Ivanovich Churyamov and Svetlana Ivanova Girasimenko and is named after them.

In June 2011 Rosetta was placed in an art of artificial hibernation out of which it again woke up in January 2014. In August Rosetta rotated around the orbit of the comet. The instrument carrier Philae took off the probe approximately 7 hours before its landing, although a problem on board was observed. The cold gas nozzle above on the power unit did not evidently function – said Stephan Ulamaec who is competent for the landing at the German Centre for Air and Space Journey. However the landing was successful. Tschuri should give information about how the solar system has developed. The experts come to an end that it is put together as nebula out of which before 4.6 milliard years the sun and its planets have been built.

After turbulent landing the Philae laboratory of Rosetta Mission is now on the surface of the comet Tschuri, the first experiment has been executed and is placed in artificial hibernation due to deficiency of energy.

There was exuberance in the control centre of the European Space Organization (ESA) . When on the last Wednesday the 12 November 2014 at 17 hrs MEZ the landing of Rosetta on the comet Tschuri was proclaimed. However the joy lasted shortly. Quickly it was not once clear whether Philae would be able to stand at all on the surface.

Why? One after another two of the three redundant landing mechanisms broke down. Already before the landing could stand firm, the jet which Philae should have pressed the comet did not function. With the first contact with Tschuri two harpoons should then ignite and re-hooked on surface clawed. None of the two has disengaged. The Philae finally still certainly could land, lay on the third and the last mechanism, and in elastic damper. Its duty with recoil to absorb so much kinetic energy that

Philae remains caught in gravitational field of the comet. At 700 to 1000 metre height Philae is again raised after landing. Hansjörg Dittus, the chairman of the German Centre for Air and Space Travel, responsible for the area of space journey research and technology estimated. With that it could not escape from the comet but will make a hop he said to the VDI news. First of all with the third surface contact the lander came to rest.

Also when at the end it was close, the mission has already now been a success for Dittus. "I could introduce myself" said the DLR Chairman that everything functions perfectly. Klaus Schilling, professor for Robotics and Telematics at the University of Würzburg conducted at the end of 1980 for the firm Dornier the first capability studies of Rosetta. More than twenty years later he was excited "Man has met astonishingly the first landing place." It is not all surprising that individual few components after ten and a half years of flight in the critical cosmic environment have not worked perfectly although the important scientific measurements conducted and at the end transmitted is fantastic.

Rosetta and Philae adopted immediately the research activities. In total both the probes have 21 experiments on board the lander carries 10 out of these experiments. At the beginning Philae avoided still the unnecessary mechanical contact with Tschuri. Because without harpoons it could have been self-sufficient as for example with bohring in order to shot it back from the surface.

One of these experiments: Mupus, Hammers in 500 million km distance. As the researchers on earth finally ventured to penetrate in the underground these hit hurriedly a surprise. "We have so far in the floor penetrated only partly with a depth of nearly 15 cm the chisel hit on the solid ice"-Wolfgang Baumjohann, Director of the Institute for Space Research (IWF) said in Graz who participated in Mupus. A stick of glass fiber nearly half meter long was driven in the ground. At its internal side: Sensors recorded the heat and temperature conductivity as also the temperature as the function of the depth.

About 56 hours Philae accomplished experiments until it on the 15 November 2014 plunged in the hibernation stage. The energy brought from the earth went out of it. At its landing place Philae through boulders was shielded from the sun. The solar panels do not bring in its full performance. Previously the team regarding Philae project manager, Stephan Ulamec succeeded to turn to 35° the body of the lander along with its solar panels. So it is aligned towards the sun better and the batteries could be quickly changed. Philae and Rosetta will still require energy lastly when Tschuri reaches a point next to the sun. Then the temperature at the surface rises and the material sublimate that is it transforms direct from the solid to the gaseous state of power unit. The consequence is a comet tail and many materials, the probe duo can investigate.

Perhaps the researchers come to a step close at the end of the goal of the Rosetta mission in order to understand how the solar system has developed. The space journey expert Wolfgang Baumjohann says the Rosetta Mission is an exploration in classical sense. We have gone towards where still entirely new measurements and costing are to be made.

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Source:

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