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| Autore | Morfill Gregor |
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Experiment on the Mir Space Station; The Hole; The Making of PKE; NASA Wants to Stop PKE; NASA Wants to Stop PKE Again; The Pump; 9. Meeting and Training the Cosmonauts; 10. Baikonur -The Russian Spaceport; Baikonur, The Town and The Spaceport: Some History; Visit to the Spaceport: Back to the Story; Soyuz to the Launch Pad; Unscheduled Meeting with the First ISS Crew; Launch to the ISS; Lift-off; Life on the ISS; Some Data about the ISS; Daily Routine; Hygiene Food and Drink Exercise; 11. Launch of PK-3; PK-3 on Board the ISS; Renaming PK-3 to PKE-Nefedov; 12. Korolev -The Forbidden City; Renaming Kaliningrad to Korolev; The Yuri Gagarin Cosmonaut Training Centre; Cosmonaut Training; 13. PK-3Plus - How it Began; A Conspiratorial Meeting in a Moscow Hotel; 14. Some Science Results; Baturin Effect; Crystallisation and Melting at the Atomic Level; Phase Separation -The Oil-Water Problem; Electrorheology -What is it?; Bubbles and Drops at the Smallness Limit; Solitary Waves (Tsunamis) at the Individual Particle Level
The Origin of Turbulence -A Single Particle View
15. Some More Science Results; Dynamics of Crystal Defects; Two-dimensional Melting of a Plasma Crystal; Converging Nano-flows; Mach Cones; Heat Conduction in Membranes; 16. Plasma Crystal -The Most Successful Space Station Experiment; 17. Recollections from the Cosmonauts; From Yuri Baturin's Diary; From Mikhail Turin's Report on the ISS after Completing Another Session of the Plasma Crystal 3 Experiment; From an Interview with Mikhail Turin by Yuri Baturin; A Cosmonaut is not just a Lab Assistant!
Talgat Musabaev Talking to Gregor Morfill -A Recollection

Sommario/riassunto

This book looks behind the scenes at the Plasma Crystal laboratory on the International Space Station (ISS) to see how science and research is carried out on the first physical science laboratory in space. As well as the background story of the ISS and the many scientific discoveries that were made, it focuses on the ups and downs on the route to success, and the people involved: the scientists, engineers, agency representatives, and especially, the experimenters in space - the cosmonauts. Complex plasma research is the other focal point of the book, and this field of science is at the forefron
