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### Golden companies, CU put new ideas in orbit

By Ann Schrader The Denver Post

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A depiction of the suitcase-size CICERO satellite. The project borr of space technology, costs a fraction of government missions and

Two companies with operations in Golden are teaming with the University of Colorado on a program that some believe offers a new model for how space research is designed and funded.

GeoOptics LLC, founded in 2005 by a consortium

of scientists, has joined Broad Reach Engineering of Golden to develop a fleet of microsatellites to monitor Earth's atmospheric processes.

Delivered in real time, the highly accurate temperature, density, pressure and moisture data promise to improve weather forecasting, hurricane and storm-track predictions, climatechange research and space-weather monitoring.

Customers for the information may include the Air Force, mapping firms, airlines and the N ational Oceanic and Atmospheric Administration.

GeoOptics is based in Pasadena, Calif., and has offices at several sites, including Golden.

The first of GeoOptics' 18 suitcase-size satellites is scheduled for launch in 2012 and will orbit at 450 miles high.

Called CICERO — the Community Initiative for Continuing Earth Radio Occultation — the s atellites borrow the best of space technology, cost a fraction of government missions and leave risk to investors instead of taxpayers, said Christian Lenz, GeoOptics chief engineer and Broad Reach senior space-systems designer.

Retired U.S. Army Gen. Wesley Clark, who chairs an investment group in Washington, D.C., is on GeoOptics' board.

Clark said he likes the concept "because satellites have gotten to be complicated and



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expensive. This is a much more efficient use of space."

The approach could spawn other businesses, Clark said, adding: "When America is looking for jobs and looking at budget deficits, this could save \$1 billion and create several thousand jobs in the process."

Collaborating with GeoOptics will be CU's Laboratory for Atmospheric and Space Physics.

LASP director Dan Baker said there is a need to explore "a more innovative way of



Christian Lenz, left, and GeoOptics executive vice president Chris McCormick are pictured at the company's Golden offices, 1113 Washington St. (John Prieto, The Denver Post)

The partnership will give students hands- on opportunities, from design to operations.

The students, Baker said, can go to work at space companies and agencies "with a new set of insights on how to do things quickly. It can be important to the whole space community."

The specific arrangement with GeoOptics is new for CU.

"With the expectation that these types of partnerships will advance the basic research, education (and) technology-development missions of the university, we expect to cultivate these types of relationships in the future," said Russell Moore, CU's interim vice chancellor for research.

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doing space missions."

"The big ones have become so long, so unwieldy and so costly," Baker said. "There has to be a better way."

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