

-----Original Message-----

From: Jim Lattis [mailto:lattis@astro.wisc.edu]

Sent: Thursday, June 03, 2010 2:05 PM

To: Traffic; Stroick, Jule

Cc: Janet Niewold; Nicholas Schweitzer; Robert Mathieu

Subject: Pedestrian-bicycle project suggestion: Planet Trek

To the Madison Pedestrian/Bicycle/Motor Vehicle Commission:

I write to suggest consideration of an educational project along city and county recreational trails that combines astronomy, environmental science, public art, and healthy outdoor recreation. Our Planet Trek project, now open to the public, takes the form of colorful and informative, but temporary, markers. The general concept and our plans for future development are explained in the attached document.

(Additional information and materials, including detailed maps, are available on the web at <http://www.spaceplace.wisc.edu/planettrek.htm>)

In its current, temporary form, Planet Trek has been very well received.

We would like to move toward a permanent installation, which would promote use of the bike/pedestrian trails and enhance their value to the public. It would be similar to projects in other communities (see attachment), but would be unique in its accessibility via recreational path. (In fact, most of the planet markers are actually handicapped accessible.) It would also be notable as one of the largest such educational installations in the world. We have had discussions with Madison's Traffic and Parks departments, city and county Arts Board chairs, as well as the Wisconsin DNR, and have encountered no fundamental problems with such a plan. Indeed, we find nearly unanimous enthusiasm for it. We anticipate that once Planet Trek exists in a permanent form, it should be possible to raise federal, private, and corporate donations to provide for upkeep, promotion, and ongoing educational activities.

Our attached packet, although self-contained, presents only a preliminary plan because details arising from any specific installation plan remain to be worked out. Regardless of its final form, a permanent Planet Trek would be an exciting and valuable addition to our community, and we look forward to further discussions of the concept with you.

Sincerely,

-Jim Lattis

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Dr. Jim Lattis, Director, UW Space Place
Astronomy Dept, Univ. of Wisconsin-Madison

"What's so amazing that keeps us stargazing,
and what do we think we might see?"

-Kermit t. Frog



Planet Trek: A Proven Concept

Planet Trek Dane County is the temporary scale model of our solar system first established along Madison and Dane County recreational paths in the 2009 outdoor recreation season. U.W. Space Place, with the help of local artists and scientists, installed the project to draw attention to last year's International Year of Astronomy, the 400th anniversary of Galileo's epochal astronomical discoveries. The Wisconsin DNR and the local municipalities from Madison to Mount Horeb also contributed.

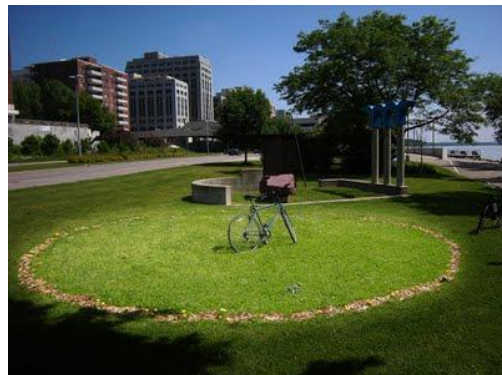


The temporary installation was in place from April through October. In that time, thousands of bikers and hikers traversed the solar system. The project received excellent media attention and the website recorded many very positive comments and anecdotes. School groups and summer recreational programs visited PTDC and participated in the public events at Monona Terrace. Backed by popular demand, we recently re-installed PTDC for this year's recreational season. The proven educational, artistic, and community value of this project point clearly to the much greater potential of a permanent Planet Trek Dane County.

Our concept for a permanent installation looks quite different from the first one made out of pine 2x4s and photocopied posters. For one, it needs to stand up to Wisconsin's severe weather and endure potential vandalism and wear and tear. In addition, our goal is to commission one or more Dane County artists to design the installation to give PTDC a unique, artistic quality that the entire community will enjoy. After requesting proposals from artists, the winning design will be selected, then fabricated and installed.

There are many other scale-model solar systems installed around the country and the world. Examples are included at the end of this information sheet. Dane County's would be among the world's largest and unique in that it would exist as a public art display located on the bike/pedestrian path.

An outdoor scale model is the only practical true scale model of the solar system because there is no other way to represent the vast expanses of space relative to the small sizes of the planets. For example, if we shrink Earth to a sphere the size of a peppercorn and reduce all other sizes and distances by the same ratio, the distance from the sun to Pluto would be well over one-half mile, and Pluto itself would be the size of a grain of sand, hence barely visible. This is why such scale diagrams cannot be printed on any sheet of paper, or even housed indoors: the small things (planets etc.) become microscopic before the large things (orbits) conveniently fit anywhere.



Outdoor scale solar system models are the best way to address these constraints, and they work well in recreational settings. The physical act of traversing an outdoor scale model, on foot or bicycle, vividly conveys the relationships of sizes and distances in the planetary environment of our solar system. Despite being a simple concept, it has a powerful impact by bringing home to each of us a clear idea of our vast home planetary system.

The outdoor venue invites public participation, encourages healthy recreational activities such as walking and biking, inspires a sense of community participation and pride, integrates with the local environments it traverses, while also reinforcing the grander environment of our solar system as a whole. These are perfect conditions for an ambitious public installation blending science, art, and community values.



The Planet Trek Dane County scheme places the sun just south of Monona Terrace on the bike path. The model runs from there along the Southwest Commuter path, then out to the Capital City trail to the Military Ridge trail, and ends with Pluto in Mt. Horeb. On this scale, the sun is a sphere about 22 feet in diameter, and Pluto is the size of a marble perched in Mt. Horeb. (The actual scale is approximately 200 million to 1.) The planets are then all convenient sizes for representation—Earth, for example, is about the size of an apple.

Our budget for the permanent installation is approximately \$200,000. This includes design and fabrication of the markers, site preparation, and design and printing of educational and promotional materials. It also includes a half time outreach specialist who can manage the installation and develop educational activities that will be used by school groups, families and individuals interested in more in-depth learning about our solar system.



The Enthusiastic Reception

Planet Trek Dane County inspired numerous articles in the local media, and much positive feedback from the public via blogs, emails and the feedback form on the Space Place website. Here are a few examples:

Blog excerpts:

"Physically visiting the (planet) sites is a great way to stretch your imagination and develop an appreciation for just how incredibly vast—and mostly empty—this little corner of the universe we call the Solar System really is... you may not be up for a bike trip all the way to Mt. Horeb, but you can experience a lot of the impact right within the city limits... Even the shorter route is filled with surprises and insights. "

"Those who don't spend much time studying astronomy or planning elementary-school field trips don't often take notice of the UW Space Place down on South Park Street, but once in a while the place offers up a cool surprise... and now the Space Place folks have thrown a little extra color into our local bike paths, with a succession of little planet-related signs stretching from downtown to points way out west."

"Today I biked to Uranus and beyond!"

Phone message:

I just wanted to say thank you for the imagination and creativity of the Planet Trek along the bike trail. I happened to ride from Verona to Madison this morning and was just delighted as an old retired third grade teacher who loves to teach about outer space. Thank you so much. That is really a nice addition to the environment and the experience of riding the trail.

Emails/feedback form:

My dad and I biked the whole course today and had a great time. It helped us to appreciate the sheer magnitude of the distances in the solar system. Thanks again for the fun ride!

I so admire the concept of the solar system model via the bike trail. Even for those people who won't go for the ride, the bookmark puts things into perspective.

I really enjoyed this little trek across the solar system. Thanks! I'm going to have to try it again some time.

Local Media:

Wisconsin State Journal (6/14/09) by Ron Seely

"Explore the entire solar system ... on your bike. In this, the International Year of Astronomy, there may be no better way to explore our solar system than by bicycle."

From WI Radio Network (5/25/09) by [Bob Hague](#)

"You can ride your bike through the solar system in Wisconsin this summer. Call it a combination of outdoor recreation and science education. Jim Lattis, director of UW-Madison's Space Place, says Planet Trek utilizes the Dane County trails system to represent eleven major objects in the solar system, at a scale of 1-to-200-million."



Examples of Other Scale Models: Astronomical Inspirations Around the World

Example 1

Gainesville Solar Walk in Florida



In a cooperative project between the Department of Parks, Recreation, and Cultural Affairs and the Alachua Astronomy club, artist Elizabeth Indianos created monuments to represent the planets of our solar system.

Each of the ten, fourteen foot tall concrete monoliths is covered with tactile and visual information including: scientific facts, symbols and poetry.

The monoliths are spaced to show the relative average sizes of each orbit using a scale of about four billion to one. Circles on the signs also showed the relative sizes of each planet compared with the Sun.

The model consists of:

- * 10 colored concrete monoliths
- * Recycled glass and brick
- * Relief text
- * Glass marbles and stones





Example 2

Voyager Exhibition in Washington, D.C.



This exhibition blends sculpture and a rich science education experience on the National Mall in Washington, D.C. It consists of 13 anodized aluminum units for: the Sun, the nine planets, comets/asteroids, a description of the Solar System, and a description of the Solar System as part of the Milky Way galaxy.

The exhibition comprises 13 units placed along a 600-meter (2,000-foot) path:

- Ten 8.5-foot tall units for the Sun and nine planets.
- Three 3.75-foot tall units: two providing an overview of the exhibition, and one for comets/asteroids.





Example 3

Sweden Solar System Model in Globen, Sweden



This system is on a scale about 10 times larger than PTDC. It includes the sun, and 8 major planets, as well as a comet and 5 minor planets.

It is centered in Globen, Sweden, with the solar system objects located throughout Sweden. In this model, each object has a unique design.



Project Timeline:

2010

April – reinstall temporary PTDC

May thru ? - Continue fundraising

Identify artists and other ways to get word out about request for letters of interest

Prepare requests for letters of interest

Send out request for letters of interest

Receive and review for letters of interest from artists

Select artists to submit proposal

Receive proposals

Select winning artist(s) to design and install project

Install planet (object) marker platforms

Artists create and install sculptures and object markers

Plan and host grand opening celebration

Plan and carry out educational activities

Planet Trek Dane County Preliminary Budget

Item	Cost	Quantity	Total Costs
Year 1			
Planning and Installation			
Design Fee/Materials	\$10,500	11	\$115,500
Planet (object) Markers	\$1,000	11	\$11,000
Foundations/Site prep	\$1,000	11	\$11,000
Printing and Mailing	\$100		\$100
Graphic design	\$3,000		\$3,000
webpage design	\$500		\$500
50% outreach specialist salary + fringe	\$31,163		\$31,163
		Yr 1 installation	\$172,263
Year 2 and Beyond			
Annual operational costs			
50% outreach specialist salary + fringe (3% inc)	\$32,097		\$32,097
Educational materials and supplies	\$500		\$500
Maintenance	\$500	11	\$5,500
Printing and Promotion	\$1,250		\$1,250
		Yr 2 and beyond annual operations	\$39,347