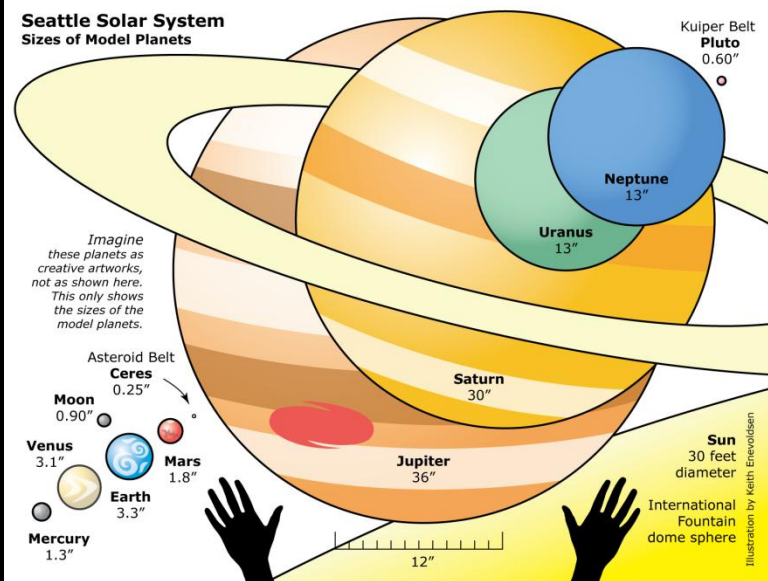
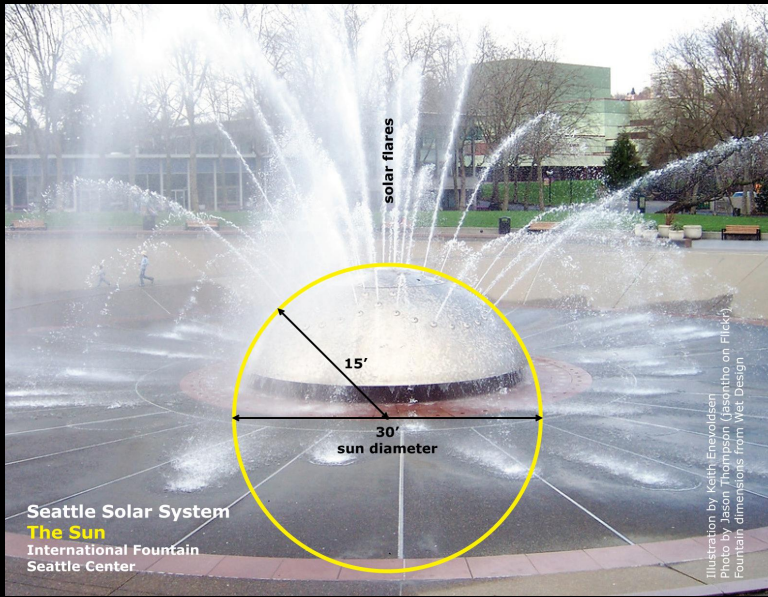
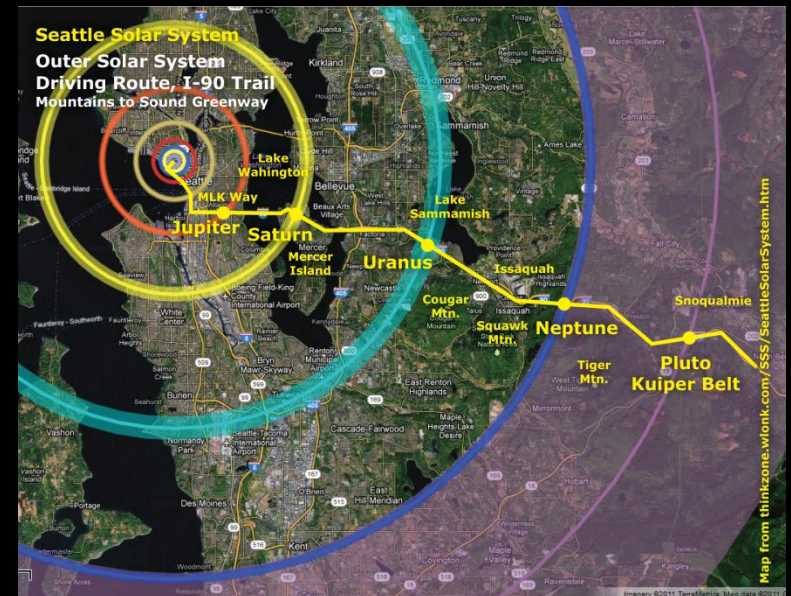
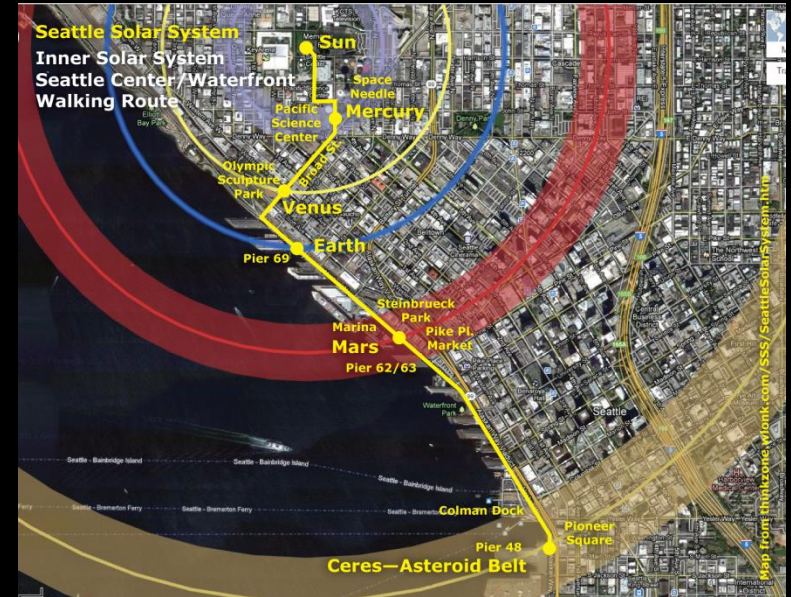


Seattle Solar System



a
public
art
+
science
project
concept



concept by Keith Enevoldsen k.enevoldsen@wlonk.com Jan 15, 2012
<http://thinkzone.wlonk.com/SSS/SeattleSolarSystem.htm>

Imagine that
the International Fountain
at Seattle Center
is the Sun.

How big are the planets?

How far are the planets?



solar flares

15'

30'
sun diameter

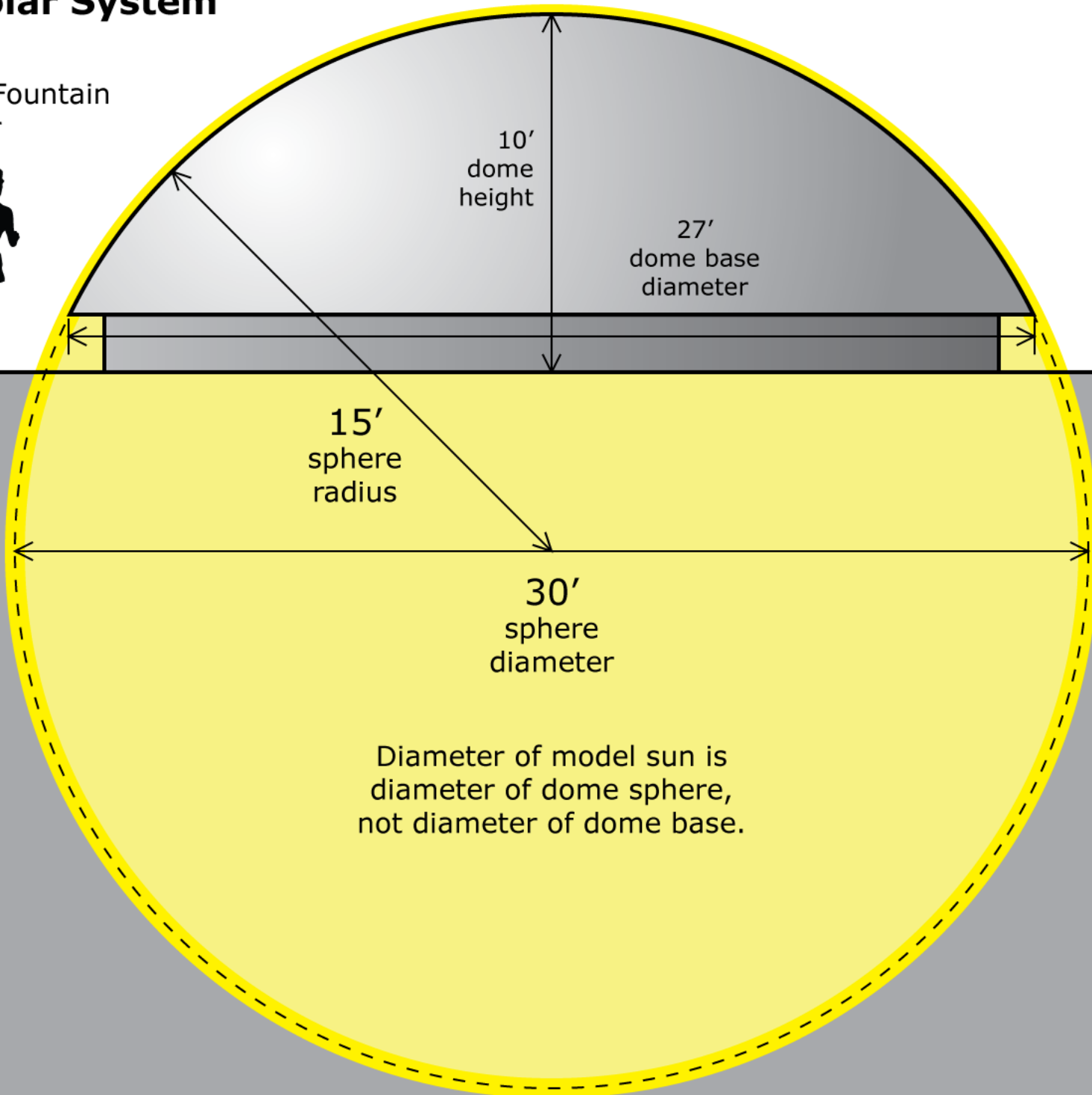
Seattle Solar System
The Sun
International Fountain
Seattle Center

Illustration by Keith Enevoldsen
Photo by Jason Thompson (jasontho on Flickr)
Fountain dimensions from Wet Design

Seattle Solar System

The Sun

International Fountain
Seattle Center



Diameter of model sun is
diameter of dome sphere,
not diameter of dome base.

How big are the planets?

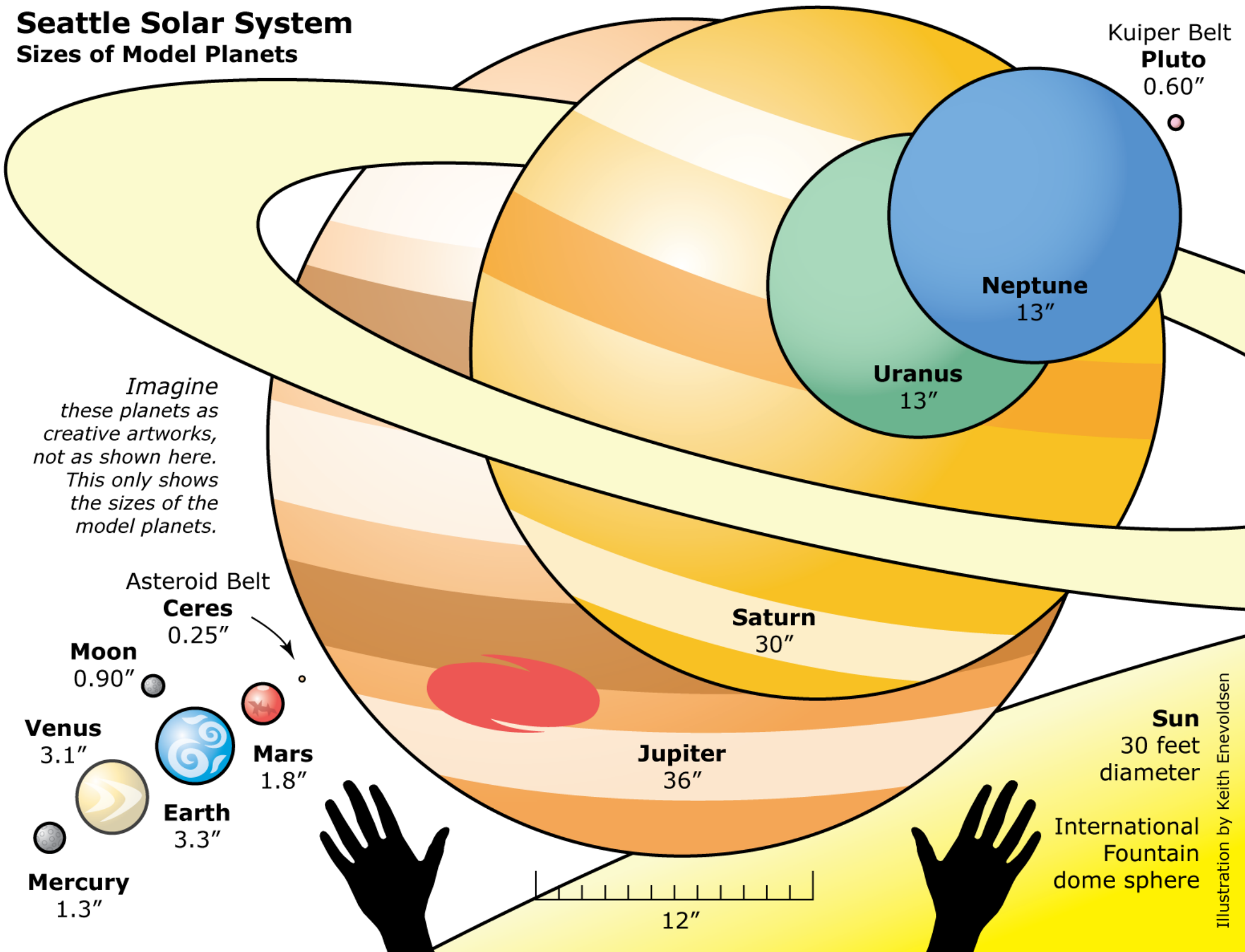
Sun diameter = 30 feet.

Earth diameter = 3.3 inches.

Jupiter diameter = 36 inches.

Seattle Solar System

Sizes of Model Planets



Art + Science

Imagine the planets as artworks placed in public places around Seattle.

The sizes and distances must be to scale – otherwise the artist is free to create.

Teachers will find all kinds of creative ways to use these artworks to teach science and math.

Small Art = Inexpensive Art

The big Sun artwork, the fountain, already exists
– no cost.

The big four gas planet artworks are not very big
– one to three feet in diameter – medium cost.

The small rocky planet artworks are TINY
– a few inches in diameter – low cost.

They could be incorporated into other artworks.

The whole point is to show that the
diameters are SMALL and the distances LARGE.

How far are the planets?

The inner planets are spread out from Seattle Center down the length of the Seattle Waterfront.

The outer planets are spread out to the outskirts of the Seattle metropolitan area.

Seattle Solar System

Sun diameter = International Fountain dome sphere diameter = 30 feet.

REAL DISTANCES				MODEL DISTANCES Scale: 1 : 152,231,000			
Diameter	Orbit Radius			Diameter	Orbit Radius		
average	average	minimum	maximum	average	average	minimum	maximum
mi	mi	mi	mi	in	mi	mi	mi
864,900				Sun	360.0		
3,032	35,980,000	28,580,000	43,380,000	Mercury	1.262	0.2364	0.1878
7,519	67,230,000	66,800,000	67,670,000	Venus	3.129	0.4416	0.4388
7,916	92,960,000	91,400,000	94,510,000	Earth	3.295	0.6106	0.6208
4,212	141,600,000	128,400,000	154,800,000	Mars	1.753	0.9302	0.8437
590.3	257,100,000	236,700,000	277,600,000	Ceres - Asteroid Belt	0.2457	1.689	1.555
86,870	483,800,000	460,200,000	507,300,000	Jupiter	36.16	3.178	3.023
72,390	890,400,000	841,300,000	940,100,000	Saturn	30.13	5.849	5.527
31,520	1,788,000,000	1,708,000,000	1,867,000,000	Uranus	13.12	11.74	11.22
30,600	2,798,000,000	2,767,000,000	2,830,000,000	Neptune	12.74	18.38	18.18
1,430	3,650,000,000	2,757,000,000	4,543,000,000	Pluto - Kuiper Belt	0.5953	23.98	18.11

Alternative: Instead of sun=30 ft (scale 1:152,231,000), we can set scale 1:150,000,000 (sun=30.54 ft).

Model is almost exactly the same size either way – model planets have same sizes and same locations.

Data from Solar System Scale Model Calculator (based on planetary data from NASA JPL)

<http://thinkzone.wlonk.com/SSS/SeattleSolarSystem.htm>

Start at the Sun, the International Fountain,
and walk south.

Mercury (1.3") is
at the Pacific Science Center,
home of the Willard Smith Planetarium,
next to the Space Needle.

Seattle Solar System

Sun and Mercury

The Sun
International Fountain
Seattle Center

Science Fiction Museum
Music Project

Space Needle

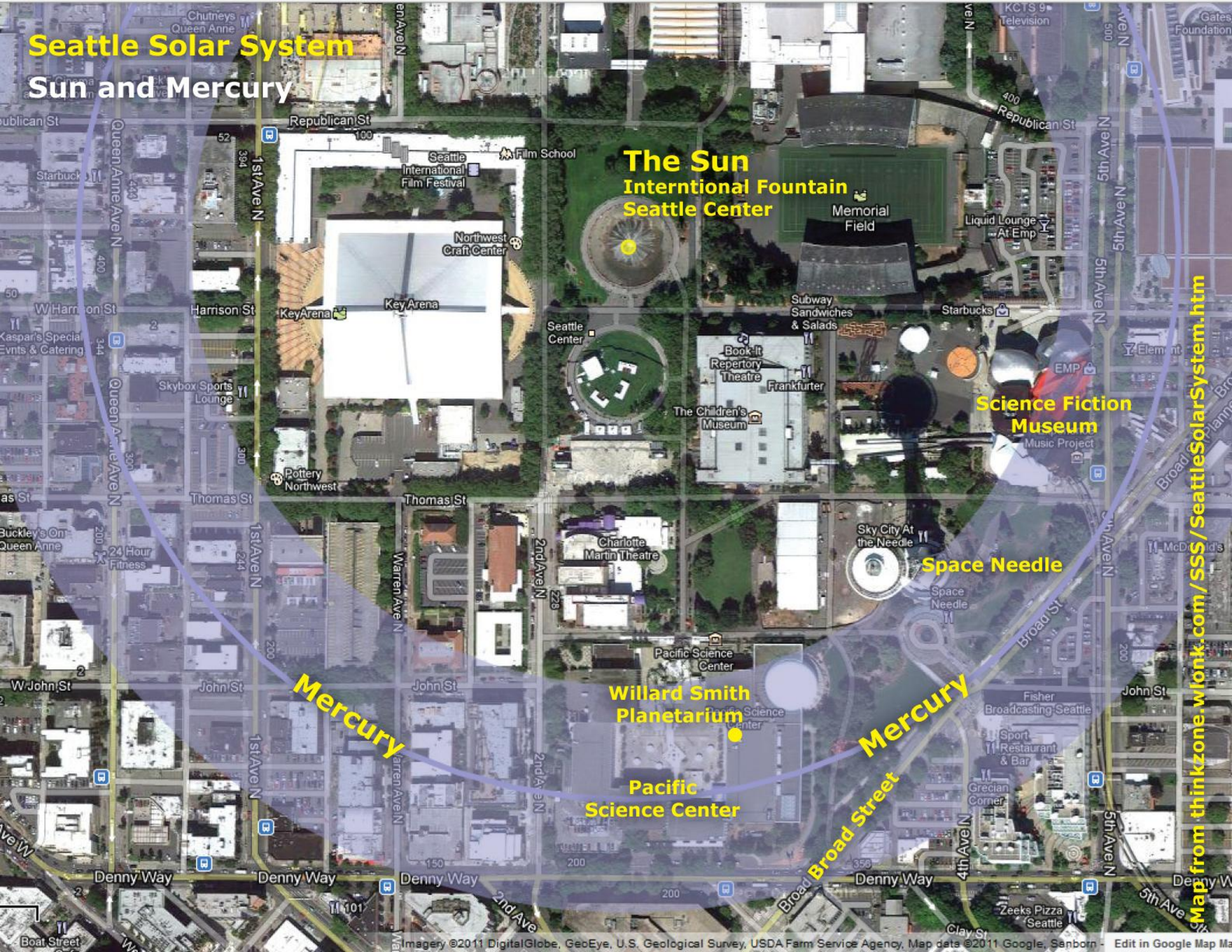
Willard Smith Planetarium

Pacific Science Center

Mercury

Mercury

Broad Street



Map from thinkzone.wlonk.com/SSS/SeattleSolarSystem.htm

Walk down Broad Street
toward the Waterfront.

Venus (3.1") is at the
Olympic Sculpture Park.

Earth (3.3") and Moon (0.9")
are at Pier 69.

Seattle Solar System

Mercury, Venus, and Earth



Sun

Space Needle

Mercury

Pacific Science Center

Olympic Sculpture Park

Venus

Pier 69

Earth

Map from thinkzone.wlonk.com/SSS/SeattleSolarSystem.htm

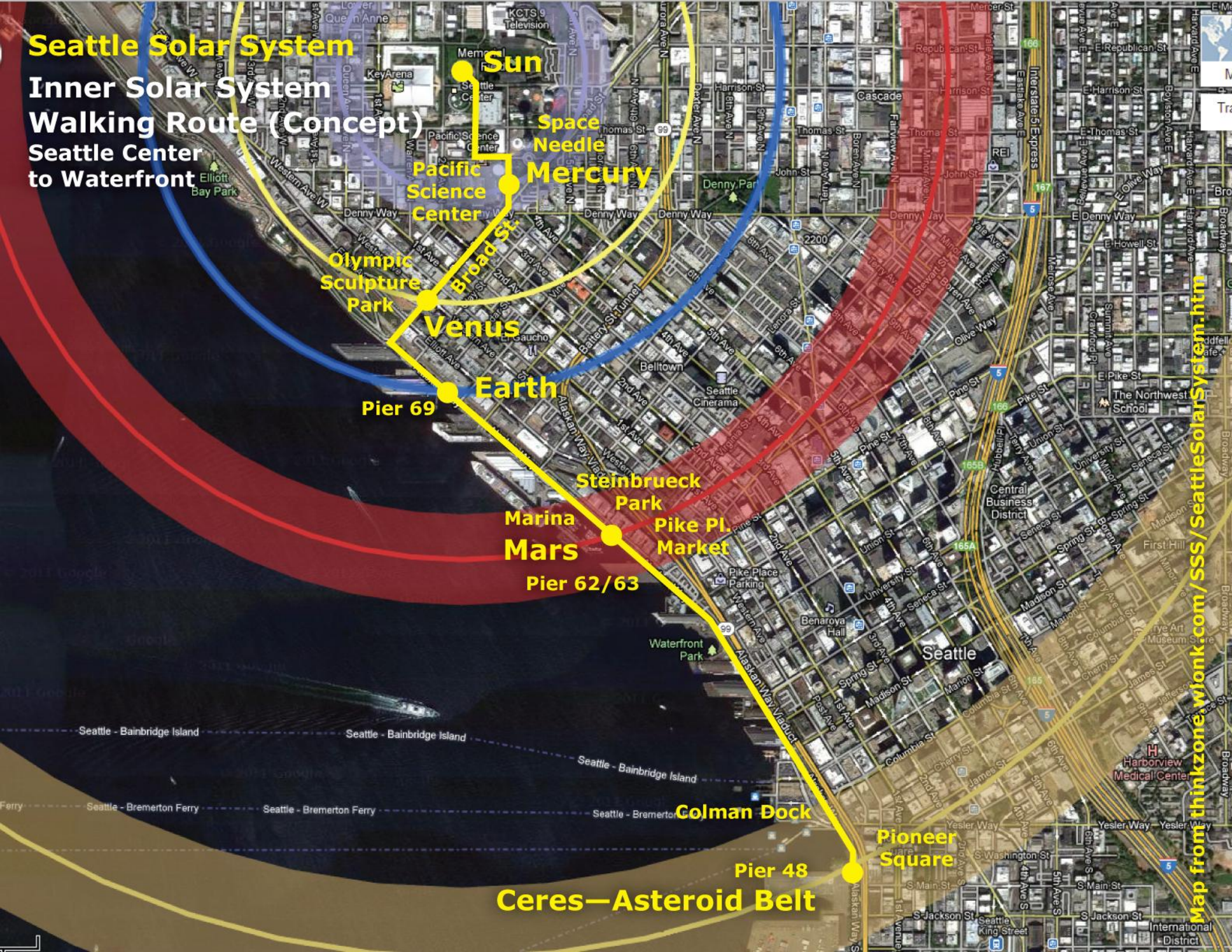
Walk south along the Waterfront.

Mars (1.8") is halfway down the Waterfront
at Pier 62/63 – future Activity Pier?

Ceres (0.25") and the Asteroid Belt
are at the end of the Waterfront
at Pier 48 – future Festival Pier?

Seattle Solar System

Inner Solar System
Walking Route (Concept)
Seattle Center
to Waterfront



Sun

Space Needle
Mercury

Pacific Science Center

Olympic Sculpture Park

Venus

Earth

Pier 69

Steinbrueck Park

Marina Mars

Pier 62/63

Pike Pl. Market

Colman Dock

Pier 48

Ceres—Asteroid Belt

Pioneer Square

Map from thinkzone.wjonk.com/SSS/SeattleSolarSystem.htm

Drive (or bus or bike) to the outer planets.

North, south, east, or west?

Let's imagine going east, following the I-90 trail.

Jupiter (36") is at MLK Way (Milky Way).

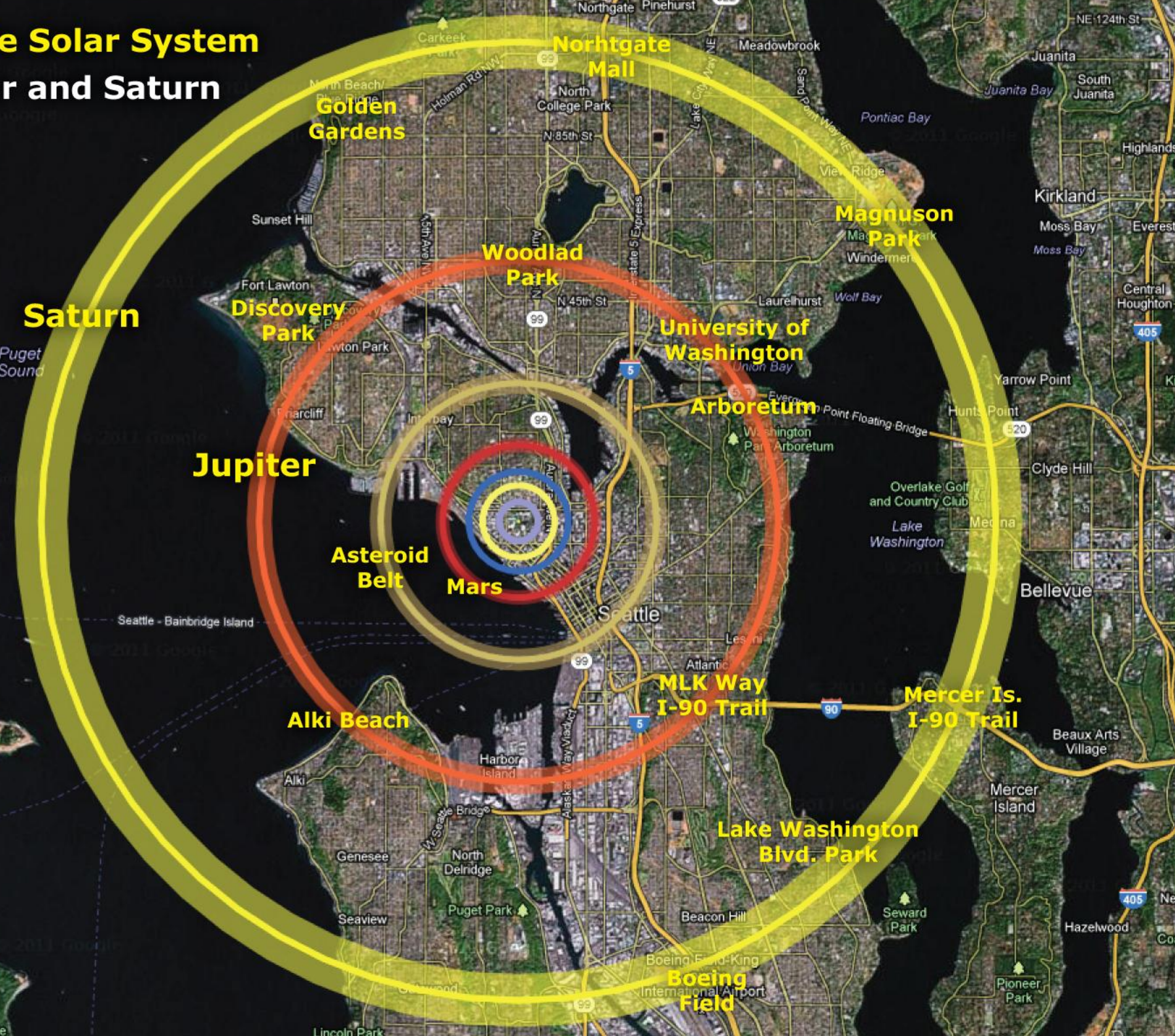
I-90 Trail – Sam Smith Park

Saturn (30") is on Mercer Island.

I-90 Trail – Park on the Lid

Seattle Solar System

Jupiter and Saturn



Map from thinkzone.wjonk.com/SSS/SeattleSolarSystem.htm

Continue east, following the I-90 trail
and the Mountains to Sound Greenway.

Uranus (13") is near Lake Sammamish.

I-90 Trail

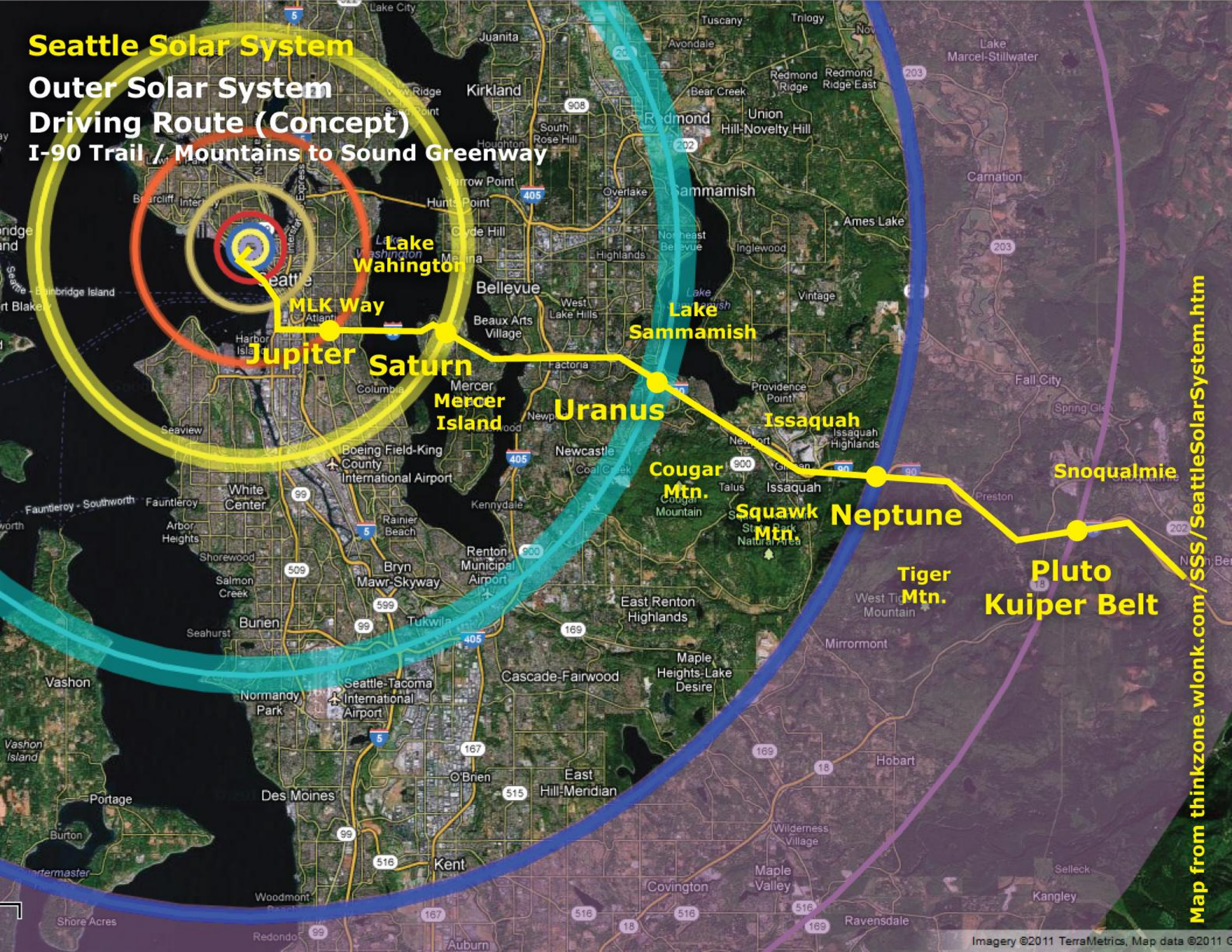
Neptune (13") is east of Issaquah.

Issaquah Creek Trail

Pluto (0.6") and the Kuiper Belt
are around Snoqualmie.

Seattle Solar System

Outer Solar System
Driving Route (Concept)
I-90 Trail / Mountains to Sound Greenway



Map from thinkzone.wlonk.com/SSS/SeattleSolarSystem.htm

Seattle Solar System

Uranus, Neptune, and Pluto—Kuiper Belt

Pluto
Kuiper Belt

Everett
(Boeing)

Neptune

Uranus

Bothell
(UW)

Saturn

Jupiter

Redmond
(Microsoft)

Battle Pt.
Bainbridge Is.

Marymoor Pk.
Lk. Sammamish

E. Bremerton

Issaquah

Snoqualmie

Cougar Mtn.

Squawk Mtn.

Tiger Mtn.

Renton
(Boeing)

SeaTac
Airport

Tacoma

Map from thinkzone.wlonk.com/SSS/SeattleSolarSystem.htm

Location, location, location!

There are many different places
the planets could be located.

Each planet could be in more than location,
north, south, east, west,
as different artworks by different artists.

More art and more science!

(Think Seattle Art Pigs.)

Mercury (1.3") – Possible Locations

- Pacific Science Center / Willard Smith Planetarium
- Space Needle
- Between PSC and Space Needle at Broad Street
- Science Fiction Museum

Venus (3.1") – Possible Locations

- Olympic Sculpture Park
at Broad Street or in the park
- Elliot Bay Park

Earth (3.3") – Possible Locations

- Waterfront at Pier 69
- Elliot Bay Trail
- Denny Park

Mars (1.8") – Possible Locations

- Waterfront at Bell Harbor Marina
- Waterfront at Pier 62/63 – future Activity Pier?
- Victor Steinbrueck Park / Pike Place Market
- Elliot Bay Trail
- South Lake Union (east of park)

Ceres (0.25") – Asteroid Belt – Possible Locations

- Waterfront at Pier 48 – future Festival Pier?
- Pioneer Square
- Volunteer Park
- Gas Works Park

Jupiter (36") – Possible Locations

- Martin Luther King Jr. Way ("Milky Way") / I-90 Trail / Sam Smith Park / Judkins Park
- University of Washington
- Arboretum / Foster Island Trail
- Woodland Park / Zoo / Green Lake
- Alki Beach

Saturn (30") – Possible Locations

- Mercer Island / I-90 Trail / Park on the Lid / Luther Burbank Park (north end)
- Magnuson Park
- Northgate Mall
- Golden Gardens
- Lake Washington Blvd. Park, near Seward Park
- Columbia City
- Boeing Field (north end)
(Museum of Flight is at the south end)

Uranus (13") – Possible Locations

- West Lake Sammamish / I-90 Trail / Marymoor Park
Mountains to Sound Greenway
- Cougar Mountain / Coal Creek Trail
- Redmond (Microsoft)
- Bothell (UW)
- Mountlake Terrace
- SeaTac Airport
- Coulon Park / Renton Airport (Boeing)
- East Bremerton
- Battle Point, Bainbridge Is.
(Battle Point Astronomical Association)

Neptune (13") – Possible Locations

- East of Issaquah / Issaquah Creek Trail
Mountains to Sound Greenway
- Squawk Mountain
(Squawk Mountain Astronomical Society)
- Paine Field (south end) (Boeing)

Pluto (0.6") – Kuiper Belt – Possible Locations

- Snoqualmie / North Bend / Fall City / Preston
Mountains to Sound Greenway
- Tiger Mountain
- Everett (Boeing)
- Mukilteo Ferry
- Point Defiance Park, Tacoma

Explore the model online

Explore the Seattle Solar System model online at
<http://thinkzone.wlonk.com/SSS/SeattleSolarSystem.htm>