



VIRTUAL MISSIONS
AND EXOPLANETS

Webinar Series

Part 2: Technical Overview



(Re)-introduction to vMAX

What

- One-week summer workshop, 5 days, 6hrs/day (flexible)

Who

- Middle school students

How

- Combination real & virtual world engagement, plus NASA data

Why

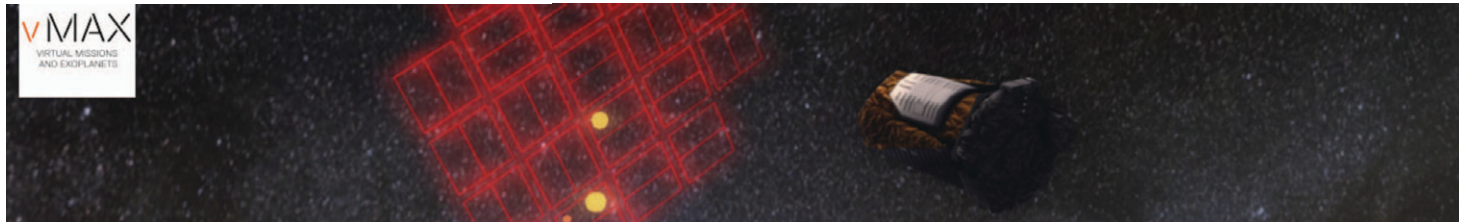
- Engage students in the mysteries of exoplanetary systems

(Re)-introduction to the vMAX Virtual World



- Immersive 3D simulations of exoplanetary systems and detection methods, explored via avatar
- Interaction in a protected virtual learning environment
- Collaborative environment for students and teachers

Video Tutorials: vMAX YouTube Channel



vmax simulation

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Virtual World Fly-Through
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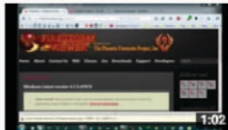
13 - Video Tutorial: Load the vMAX OAR File
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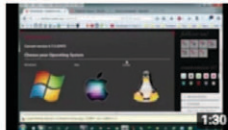
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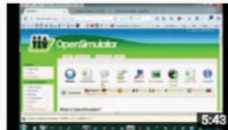
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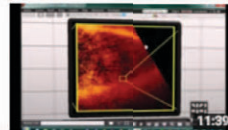
9 - Video Tutorial: Install and Download Firestorm
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8 - Video Tutorial: Install OpenSim
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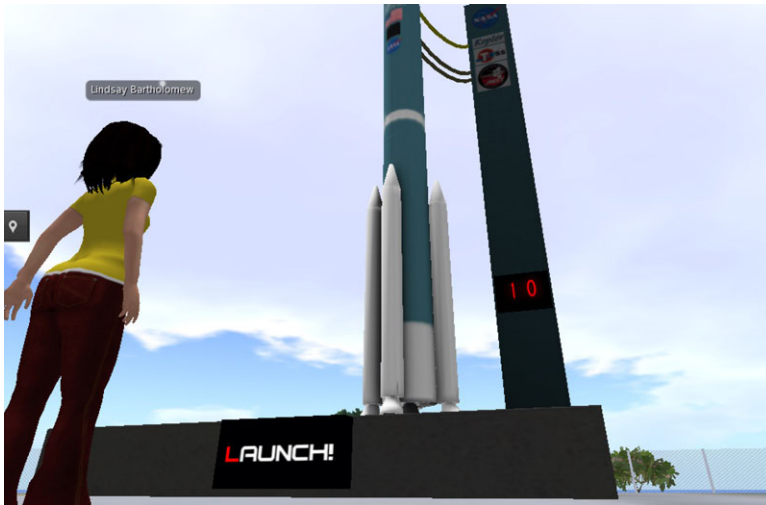
1 - Video Tutorial: vMAX Introduction
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Video Tutorial: vMAX Introduction



Navigating the vMAX Virtual World

- Methods to move around the virtual world
- Selecting/customizing your avatar
- Attaching mission patches
- Interacting with 3D simulations
- Class management in the virtual world



Video tutorial links will be provided at the end of this presentation.



VIRTUAL MISSIONS
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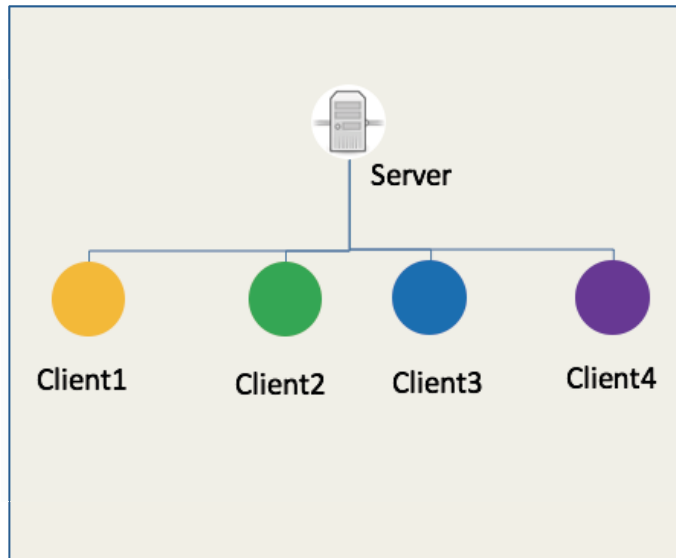
System Requirements and Installation

Poll



What's your level of technical expertise?

OpenSim Server and Firestorm Client



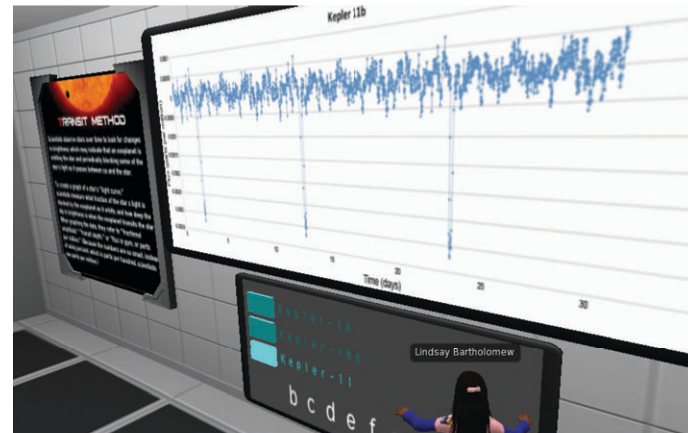
To run the vMAX virtual world with many students connecting, you need one server and as many client (student) computers.

- In this webinar, we will conduct a simpler installation to get started, where we will run and view the world in the same computer. [?](#)
- The steps to achieve the configuration above will be provided in a series of resource videos.

Server Requirements

Assuming you have 20-25 student users:

- CPU: Dual-core is minimum, 4 preferred
- RAM: 8Gb
- Bandwidth: 500 kbit per simultaneously logged in avatar (if you plan on 20 users, $500 \text{ kbit} * 20 = 10\text{Mb/sec}$)
- Network latency: Should get pings between client and server that are better than 350 milliseconds



Client Requirements for Mac

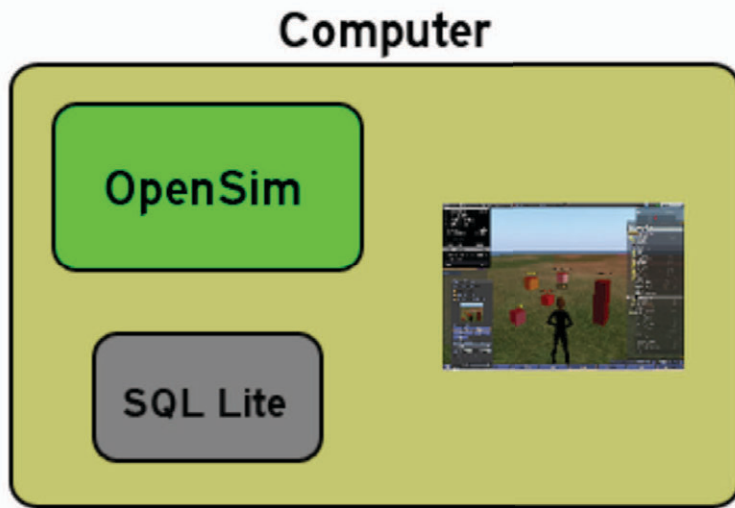
Mac OS X	Minimum Requirements	Recommended
Internet Connection*:	Cable or DSL	Cable or DSL
Operating System:	Mac OS X 10.7 or better	<u>the</u> latest release of 10.9
Computer Processor:	1.5 GHz Intel based Mac	2 GHz Intel Core 2 Duo or above
Computer Memory:	1 GB or more	3 GB or more
Screen Resolution:	1024x768 pixels	1024x768 pixels or higher
Graphics Card**:	<ul style="list-style-type: none">• ATI Radeon 9200 and above• OR NVIDIA GeForce 2, GeForce 4	<ul style="list-style-type: none">• ATI: 4850, 4870• OR NVIDIA: 9800

Client Requirements for Windows

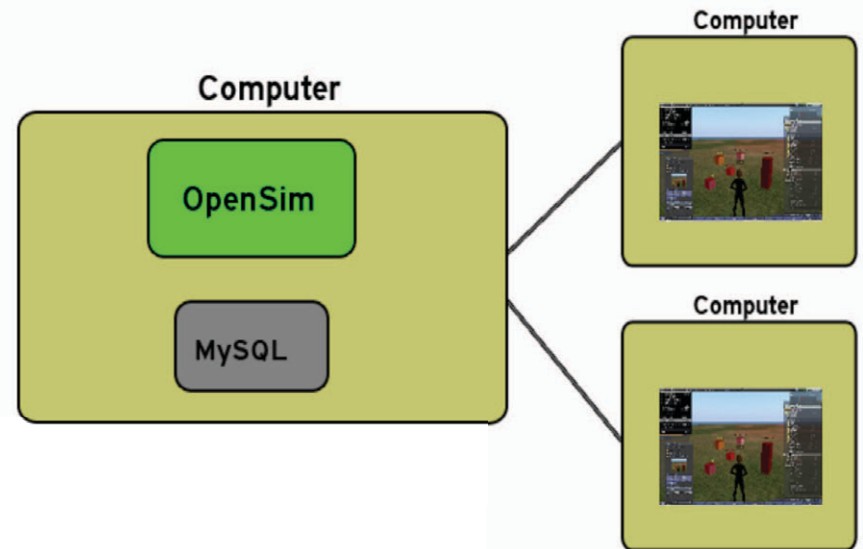
Windows	Minimum Requirements	Recommended
Internet Connection*:	Cable or DSL	Cable or DSL
Operating System***:	Vista, Windows 7 or Windows 8	Vista, Windows 7 or Windows 8.1
Computer Processor:	CPU with SSE2 support, including Intel Pentium 4, Pentium M, Core or Atom, AMD Athlon 64 or later.	2-GHz (Vista) 32-bit (x86) or better
Computer Memory:	1 GB or more	3 GB or more
Screen Resolution:	1024x768 pixels	1024x768 pixels or higher
Graphics Card for Vista Windows 7 or Windows 8 (requires latest drivers)**:	<ul style="list-style-type: none"> • NVIDIA GeForce 6600 or better • OR ATI Radeon 9500 or better • OR Intel 945 chipset 	NVIDIA Graphics cards 9000 Series: <ul style="list-style-type: none"> • 9600, 9800 200 Series: <ul style="list-style-type: none"> • 275 GTX, 295 GTX ATI Graphics Cards 4000 Series: <ul style="list-style-type: none"> • 4850, 4870, 4890 5000 Series: <ul style="list-style-type: none"> • 5850, 5870, 5970

Local vs. Server Installation

Local Installation



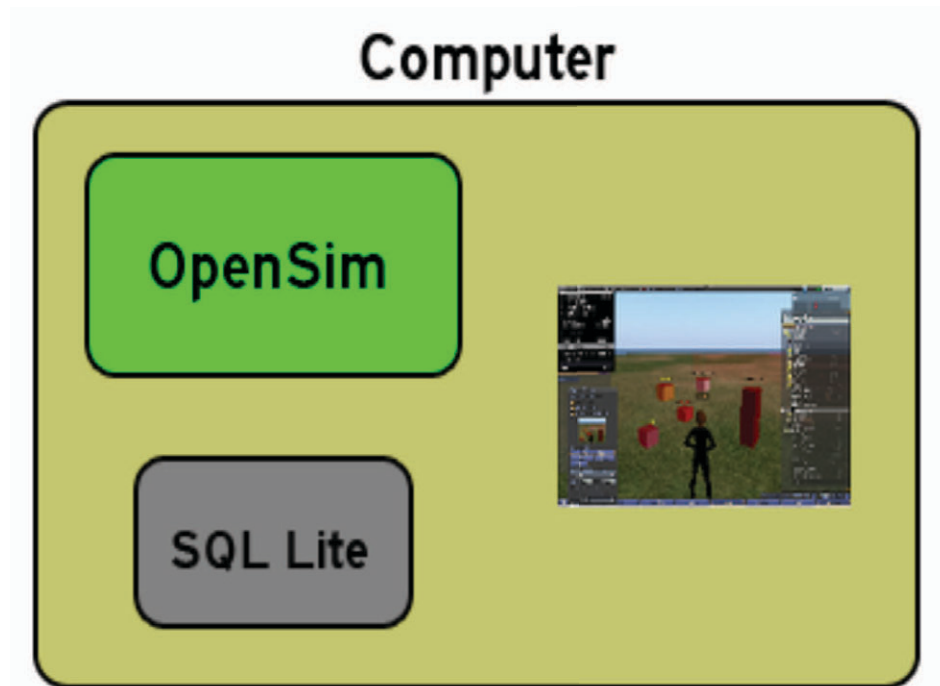
Server Installation



Local Installation

From only one computer you will be able to:

- Run the program that creates and contains the virtual world (OpenSim)
- Use the browser that lets you navigate in the virtual world (Firestorm)



Video Tutorial: Install OpenSim

- Go to <http://opensimulator.org/wiki/Download>
- Download current release binary package (e.g., opensim-0.8.2.1.zip)
- Unzip into a folder
- Download and install OpenSim and run OpenSim on your system
- Create an OpenSim administrator account



Steps to Download Firestorm

- Go to <http://www.firestormviewer.org/>
- Chose the Downloads tab
- Select your Operating System
- Download Firestorm for OpenSim



The screenshot shows the homepage of the Firestorm Viewer website. At the top, there is a logo for "FIRESTORM VIEWER" with a phoenix icon, and text that says "Brought to you by The Phoenix Firestorm Project, Inc". Below the logo is a navigation menu with links: Home, About, Contact Us, Wiki, Classes, Jira, Downloads, Support, and Developers. A search bar is located to the right of the navigation menu. The main content area features a "Firestorm Update 4.7.7.48706" section with the following text:

It is once again time for a new update!

Firestorm 4.7.7 comes with a few really nice new features, but more importantly it is overflowing with bug fixes and improvements from both us *and* Linden Lab! This release brings us to parity with LL version 4.0.1 (LL's latest up to their release today).

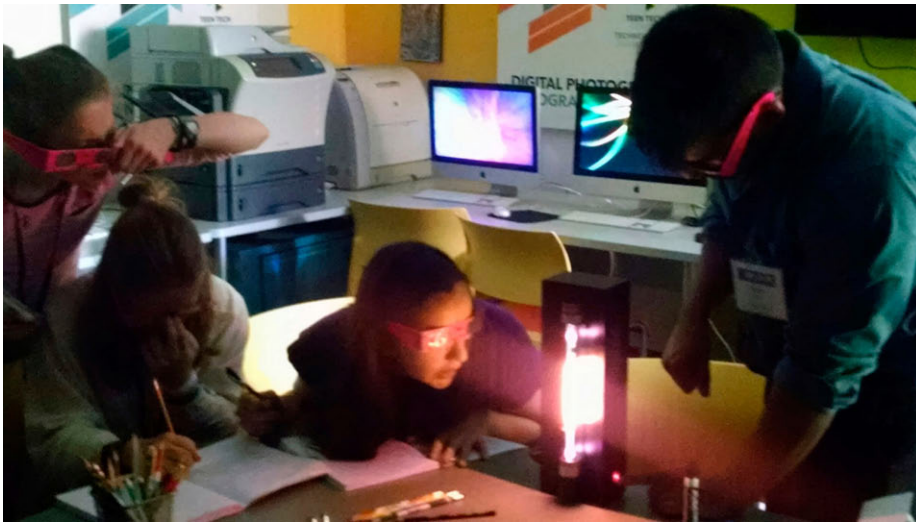
Although this is a minor release it should be considered a major update that everyone should make an effort to upgrade to. It's worth your while!

As usual there are just far too many changes to list specifics here so for a much more elaborate run through have a look at [Inara Pey's blog post on this release here](#), but the gist of it is all the LL

On the right side of the page, there is a "follow us!" section with social media icons for RSS, Twitter, Facebook, YouTube, LinkedIn, and a search icon. Below that is a "customize it!" section with a grid of colored squares.

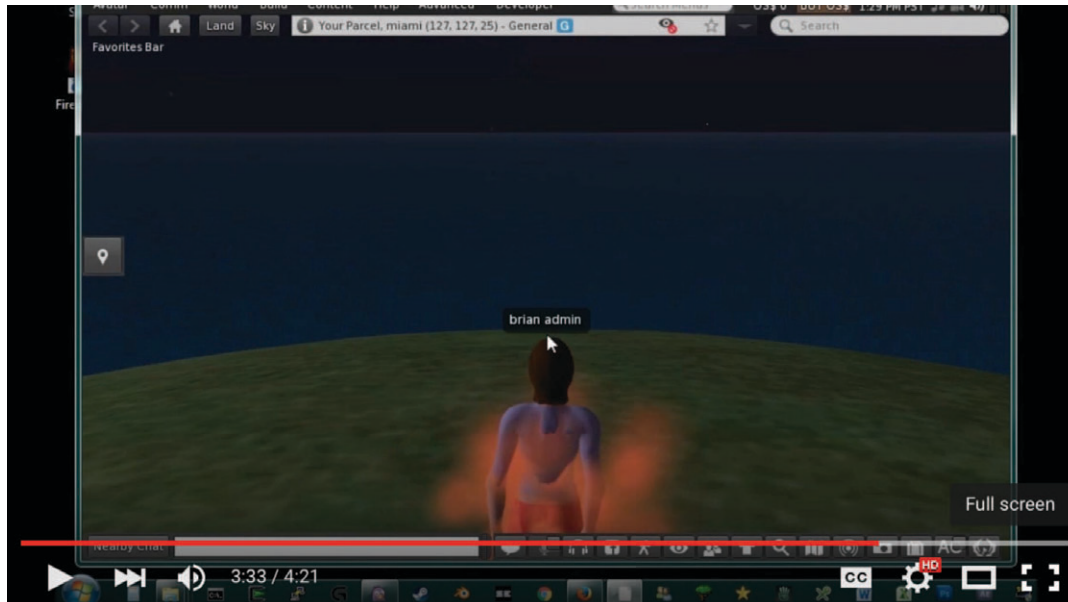
Steps to Install Firestorm

- Click on the Firestorm Installer you downloaded
- Save Firestorm to your applications folder
- Agree to license agreement
- Allow a few minutes for installation



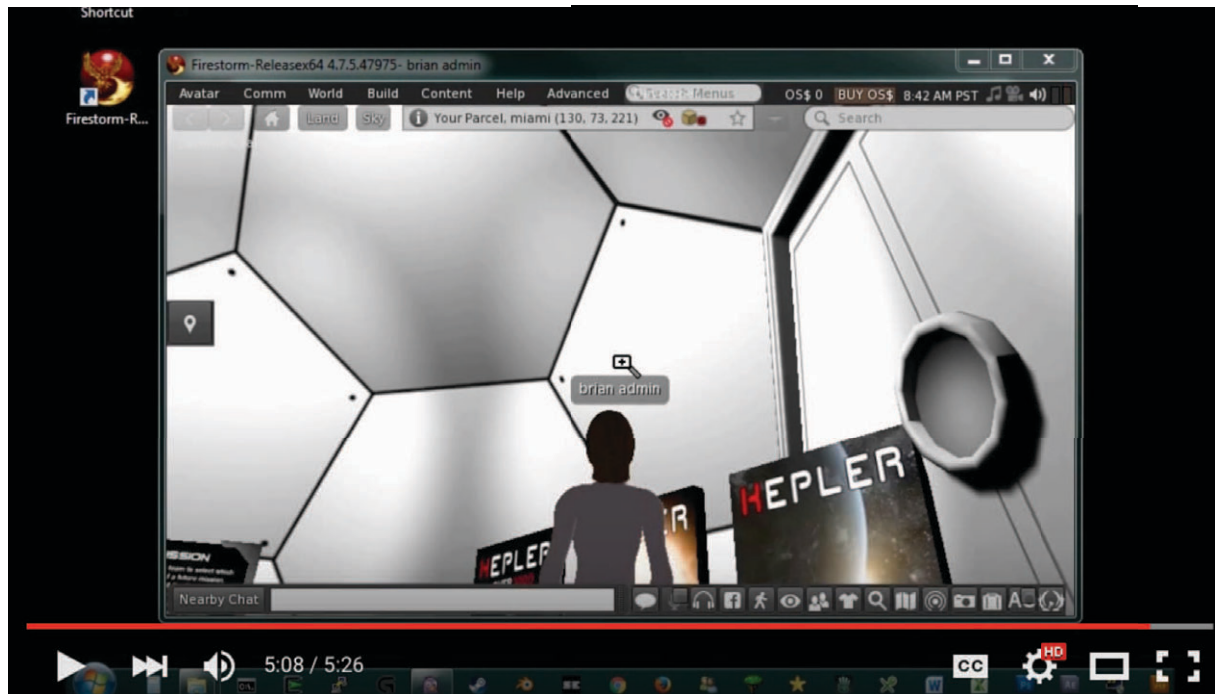
Video Tutorial: Running Firestorm with OpenSim

- Run OpenSim
- Open Firestorm
- Under “Viewer” go to “Preferences”
- Go to the “Advanced” tab on the left, and allow other grids
- Go to “OpenSim” tab on the left and add the grid localhost:9000
- Log in to Firestorm to connect to a virtual world



Video Tutorial: Load the vMAX OAR File

- Download OAR file (separate Adobe file to be provided)
- Save the OAR file on your computer
- Load the vMAX project (OAR file) into OpenSim
- Run the vMAX project files in OpenSim
- Login and view vMAX virtual world using Firestorm



Import/Export OAR File Commands

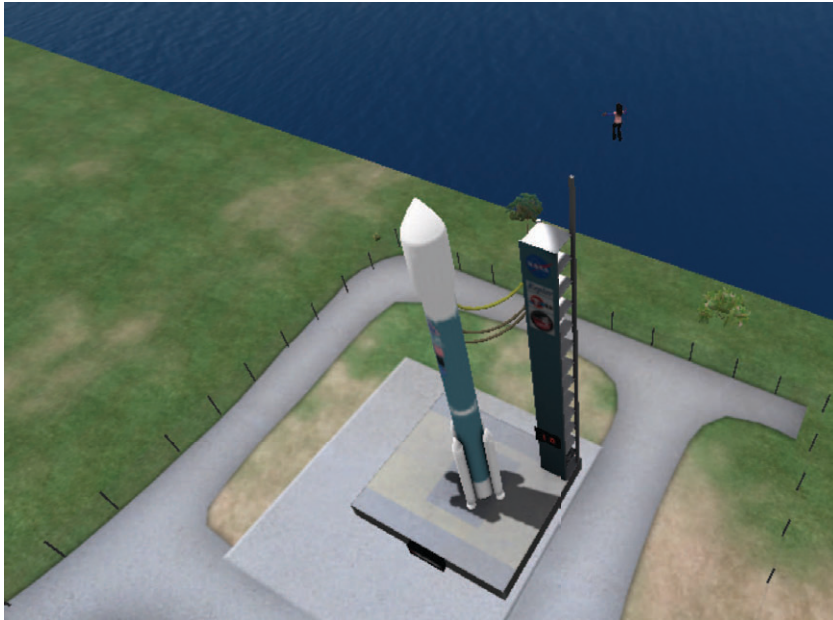
- OAR files hold all the land and assets for the virtual world
- OAR files do not save user accounts or user inventory
- Load OAR: `c:\temp\vmx.oar`
- Save OAR (to back up changes): `c:\temp\vmx2.oar`



Local Installation Process Completed!

You can now:

- Run Opensim on your computer
- View the vMAX virtual world on your computer using Firestorm





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**Class Management and
Facilitating Communication
in the Virtual World**

Username and Passwords

- Unique and easily identifiable by student name
- Identifiable according to each institution (if you have partners)



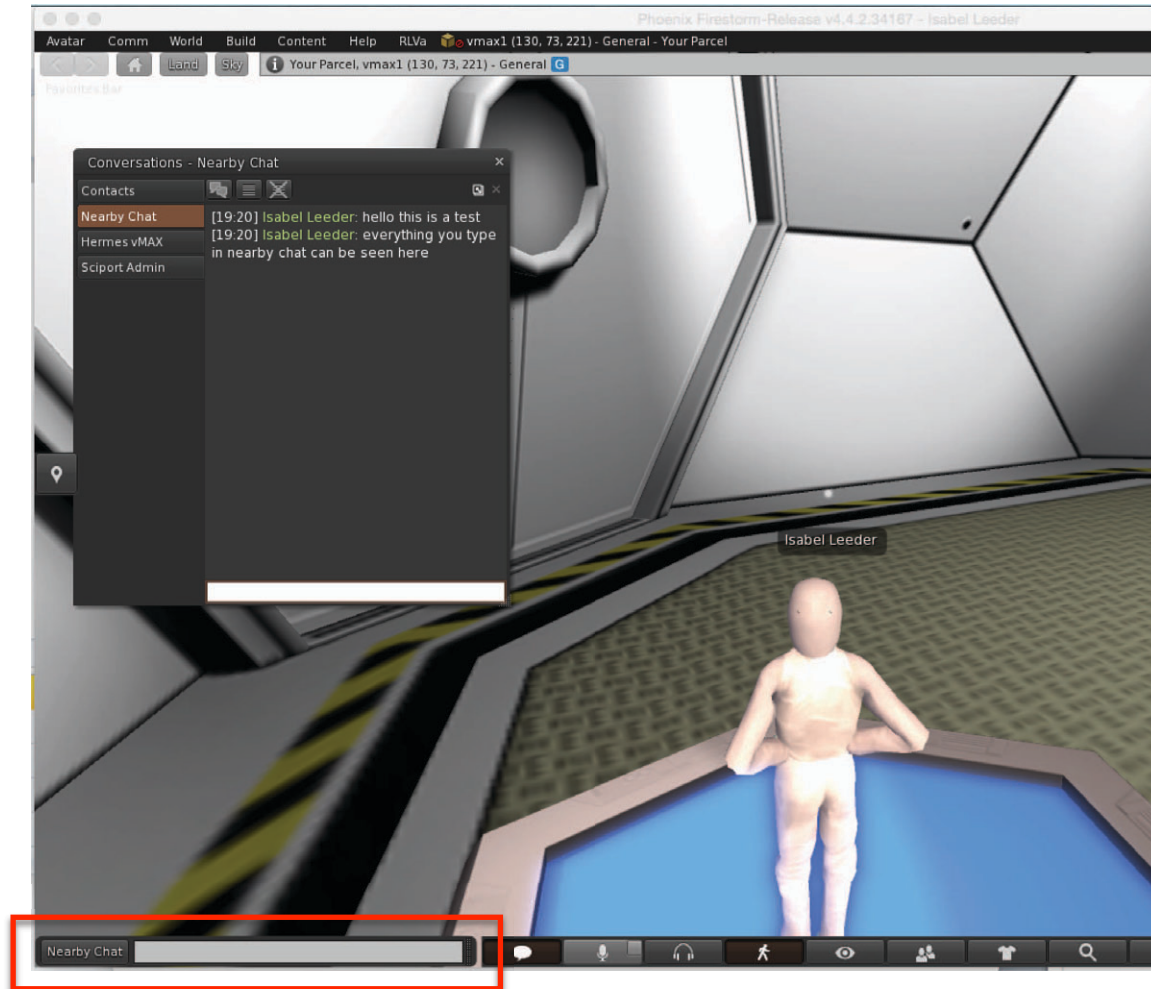
Controlling the Camera Angle

“Eye” icon (lower task bar) controls camera without moving avatars



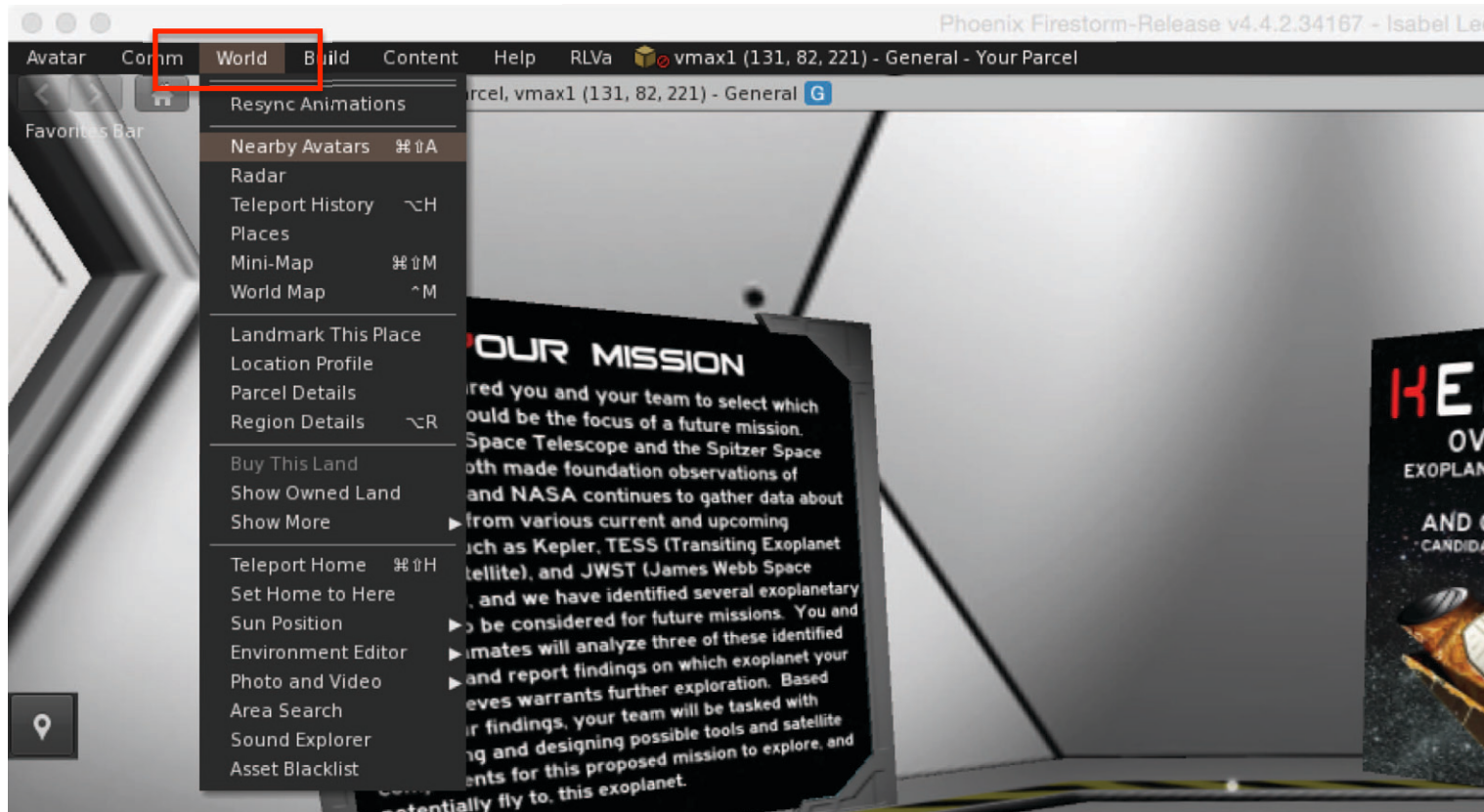
Nearby Chat

- Chat box is visible to anyone logged into the virtual world
- Clicking on “Nearby Chat” opens a window to view chat history



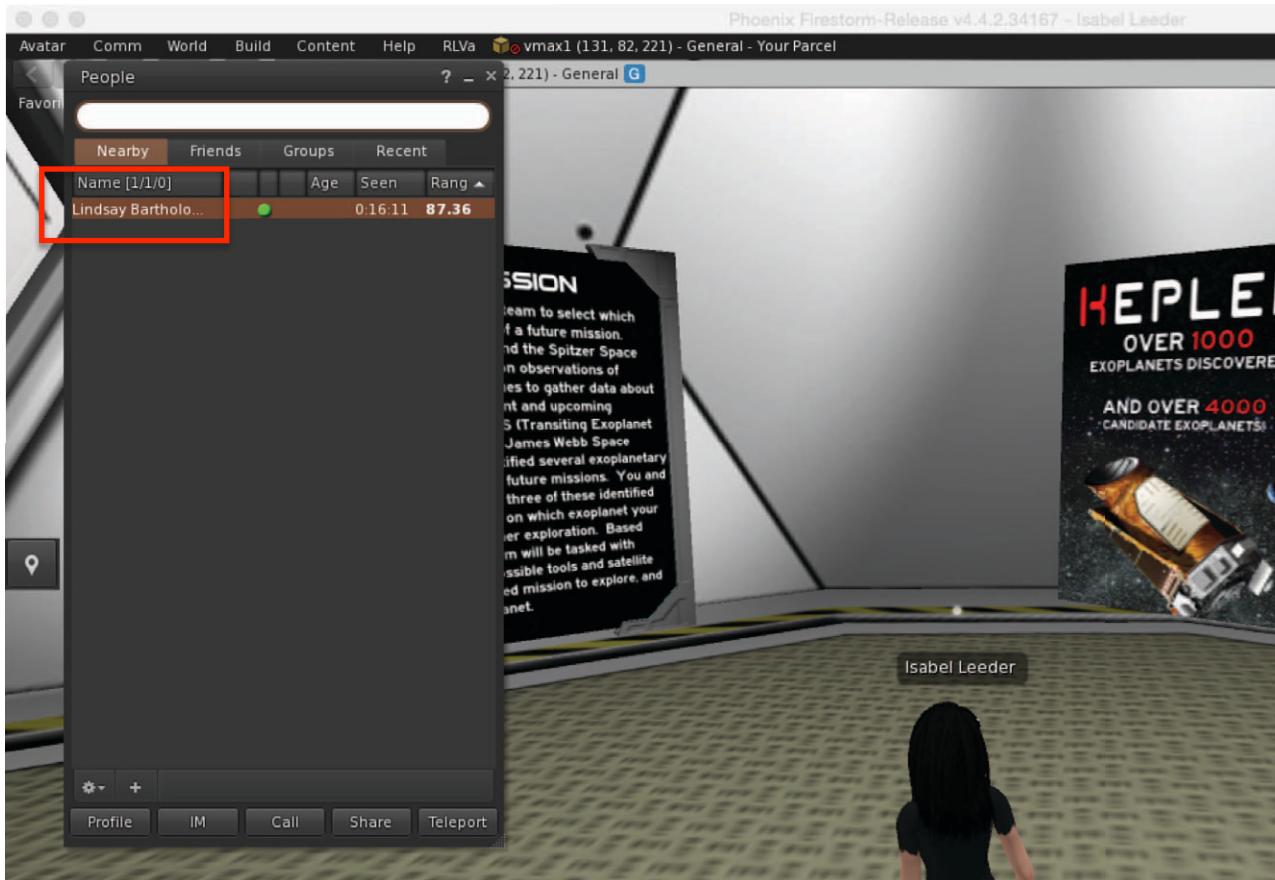
Class Management Tools

Many of these may be found in the “World” tab.



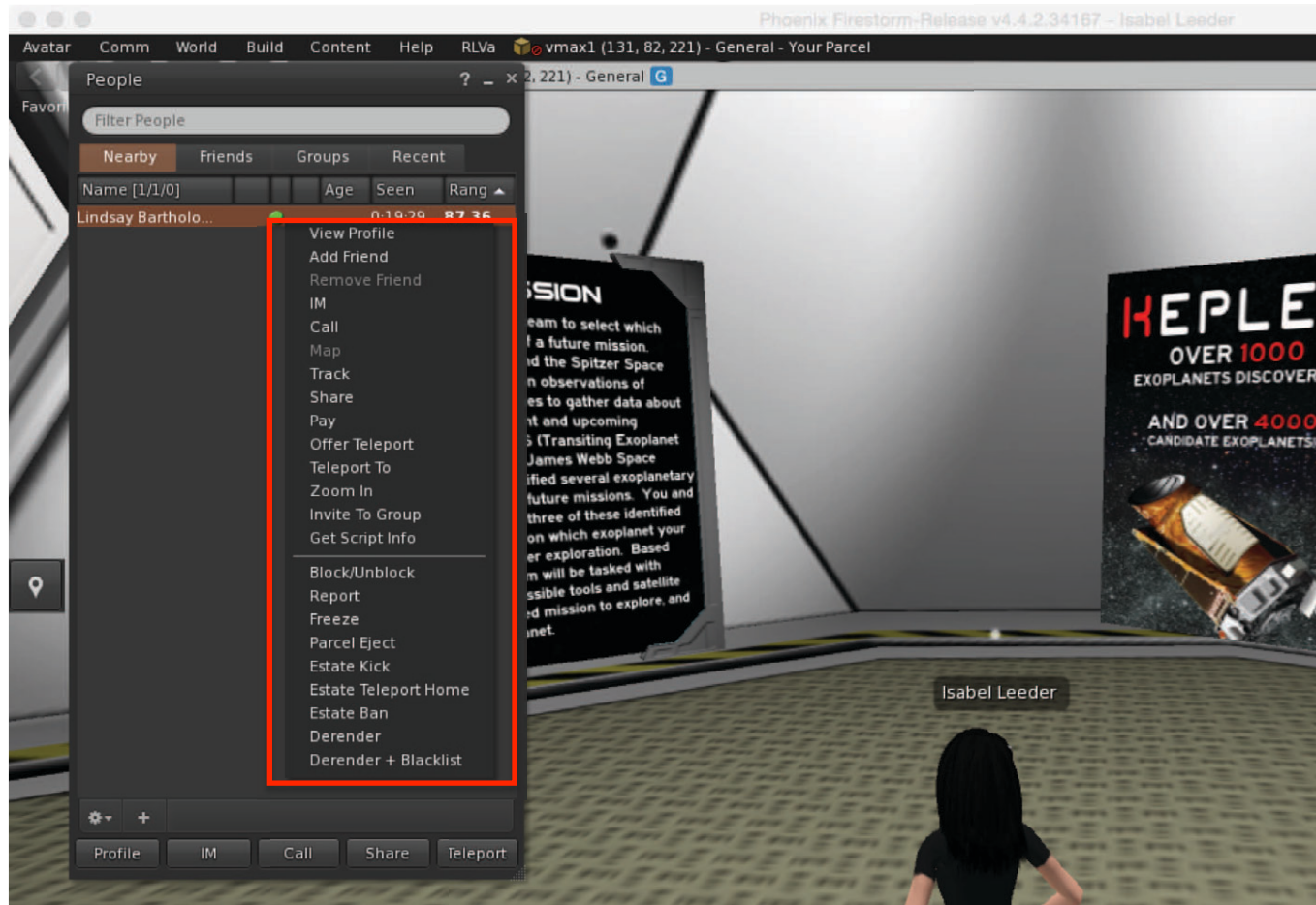
Finding Your Students' Avatars

- “Nearby Avatars” shows which avatars logged in and where they are
- Double-click an avatar’s name to get a camera view of that avatar



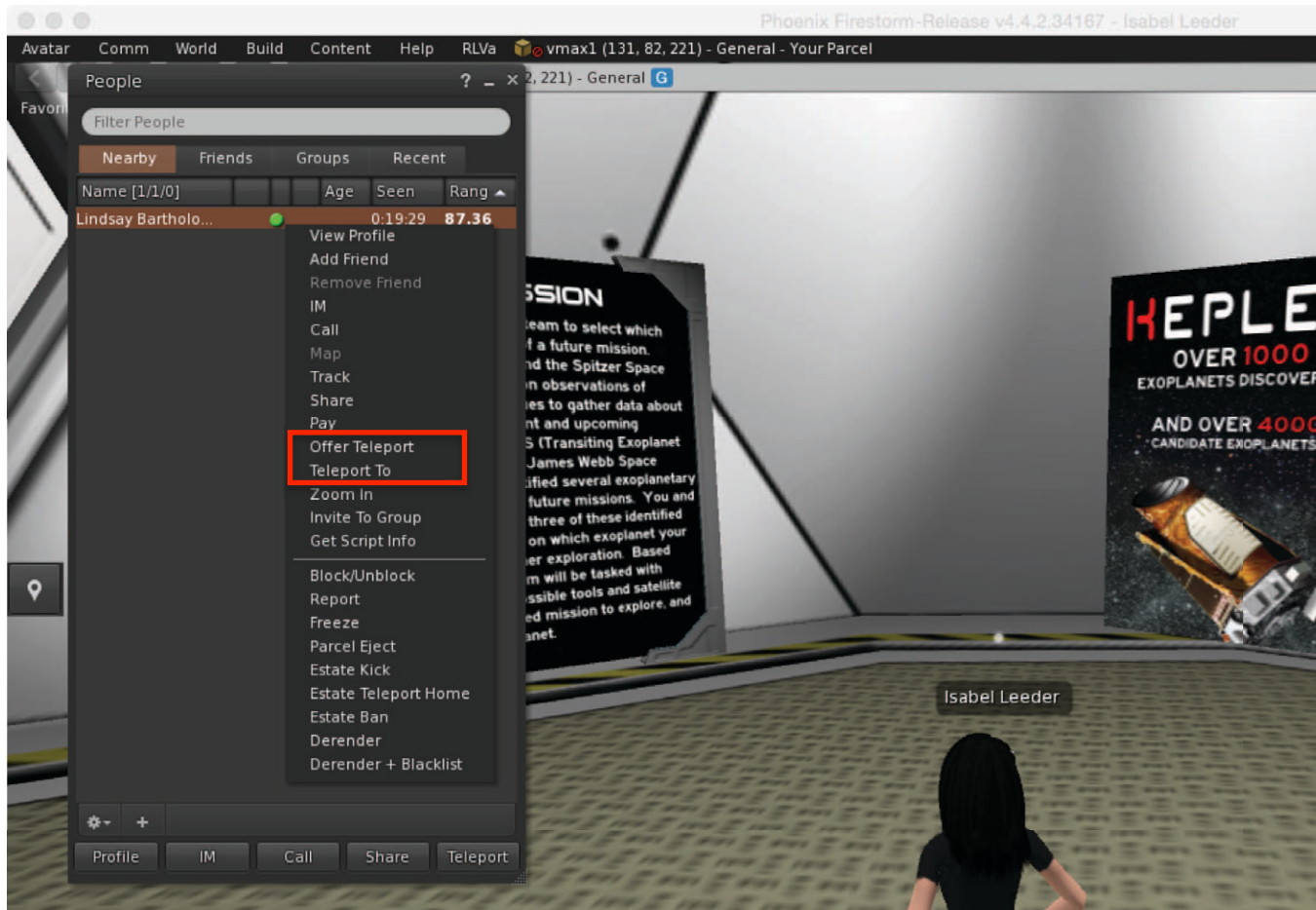
Nearby Avatar Options

Right-click on a nearby avatar for a variety of options.



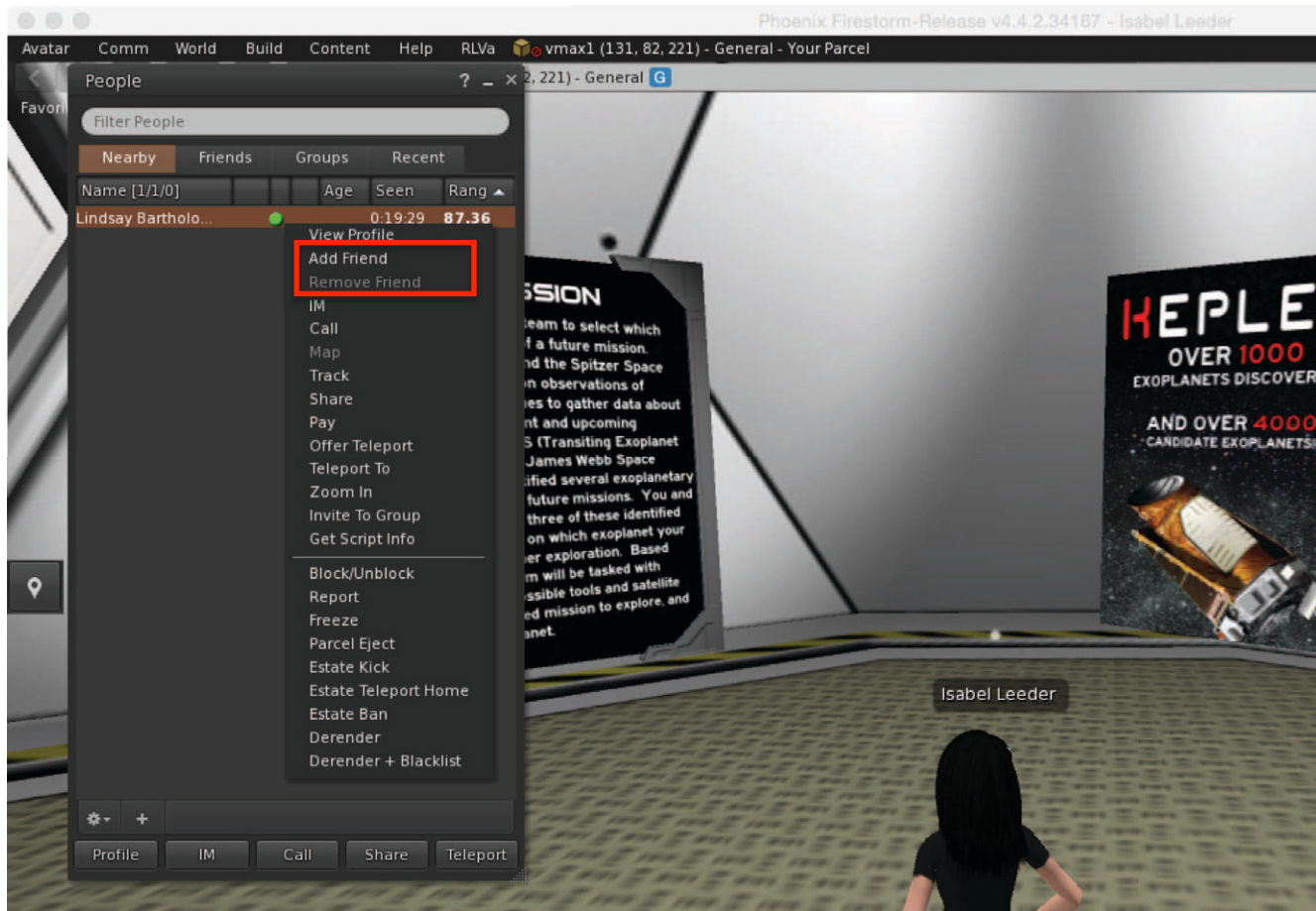
Teleporting/Offering to Teleport

Use when an avatar is stuck or lost, or when students are asked to gather in the same place



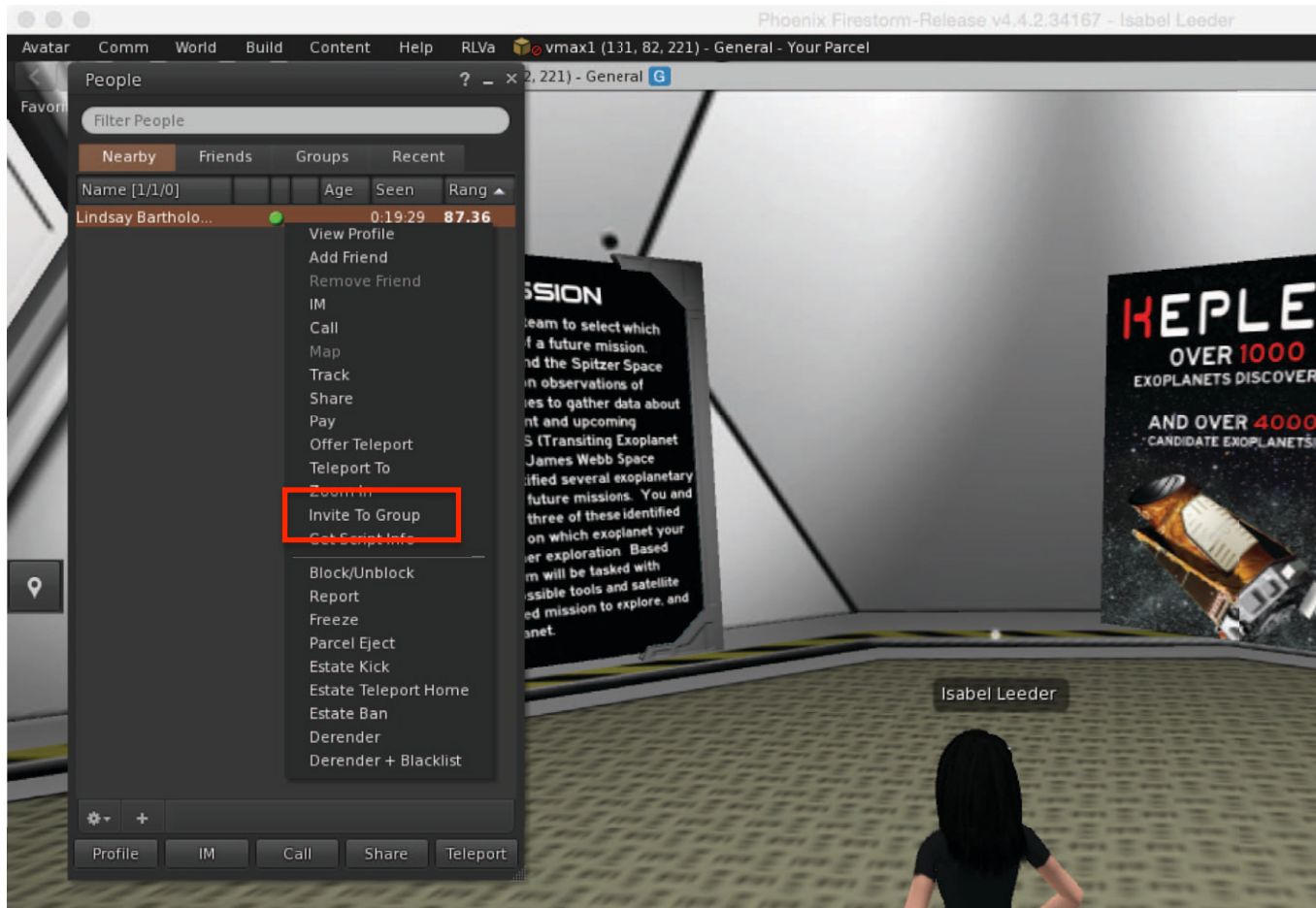
Friend Requests

Provides notifications when avatars have logged in, which helps facilitates large groups, especially with remote partners



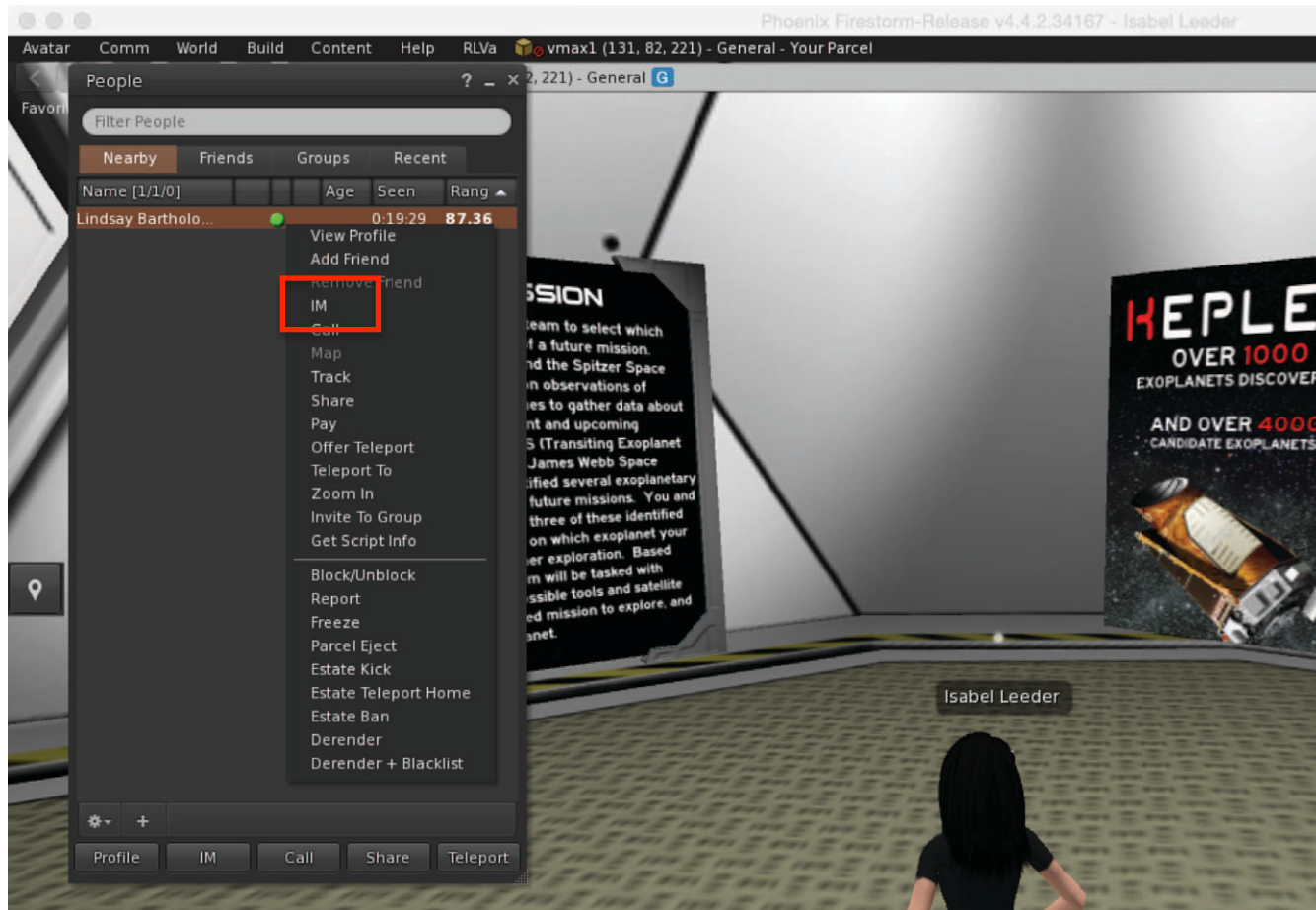
Group Invitations

Helps students working together on long-term projects find each other and collaborate in the virtual world



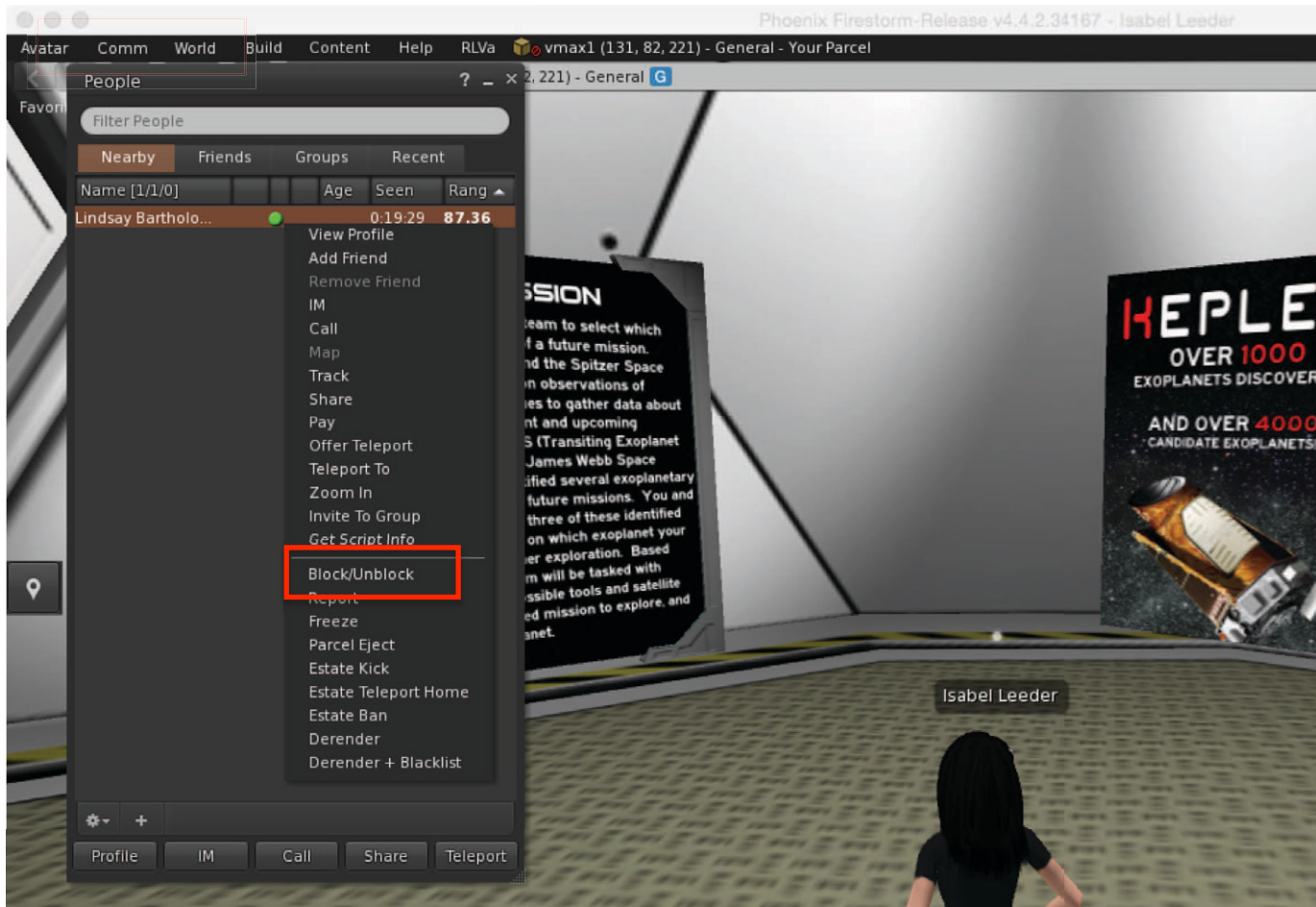
Instant Messaging

Allows students to work together without having chat viewed by others (administrators need to log in as the student to view IM history)



Blocking

Removes an avatar from the virtual world (can only be done by an administrator, as a last resort)





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Broadening Participation

Ways to Broaden Participation

- Go from local installation to server installation with multiple users (see video tutorials at end of presentation)
- Identify opportunities to partner (formal and informal education) to facilitate collaboration between sites



VMIAX

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Any Questions

?



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Aimee Weber Studio

Brian Mobbs: brian@aimeeweber.com

Resources

vMAX Curriculum

www.miamisci.org/vmax (soon located at www.frostsscience.org)

Video Tutorials

https://www.youtube.com/channel/UCs_U6SkDRmyYlaKDv1LFmLg/videos?shelf_id=0&sort=dd&view=0

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