Astronomy in Your Pocket:

An **Android** Development Journey

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http://dague.net
@sdague

Mobile vs Small Computing

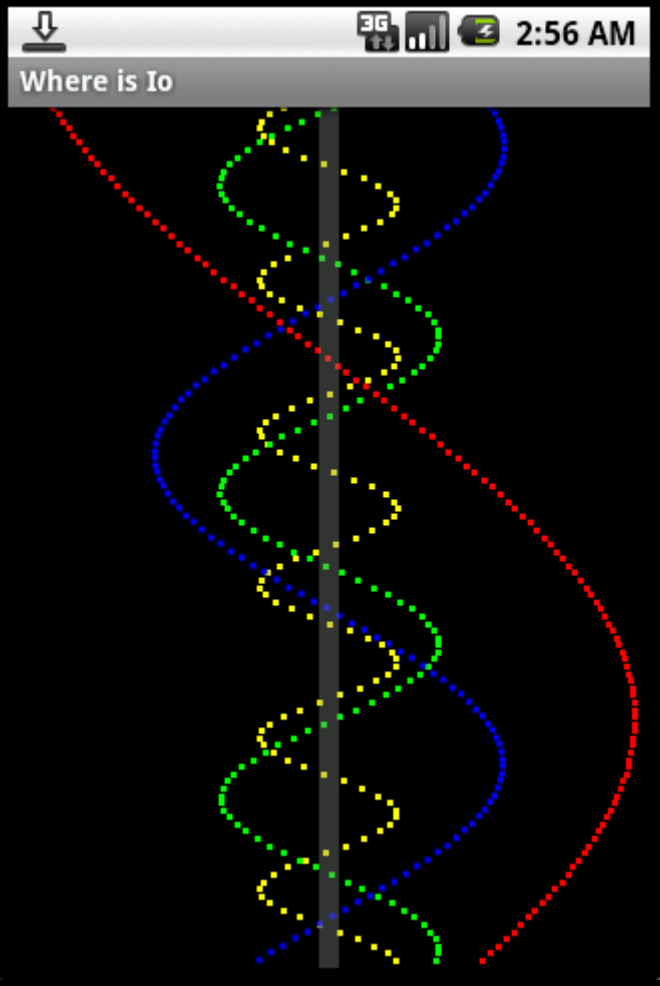
http://www.flickr.com/photos/yourdon/3077239642/sizes/l/in/photostream/

What Makes a Good Mobile Application?

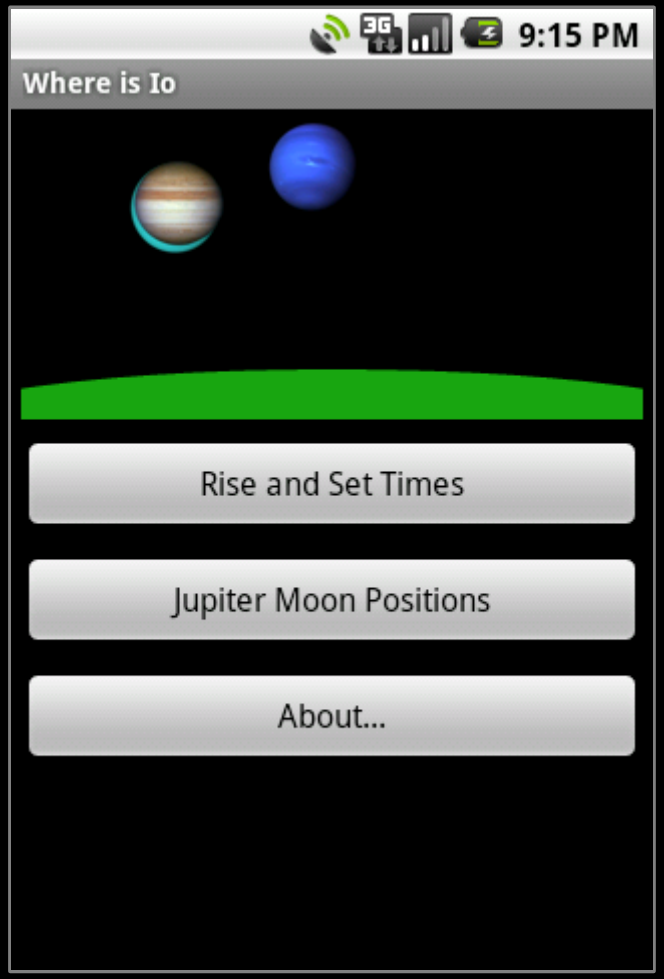
My Itch

What am I looking at?

Where is Io - First Working Code



Where is Io


9:15 PM
Where is Io
Rise and Set Times
Jupiter Moon Positions
About...

Main Layout

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout android:id="@+id/LinearLayout01"
	android:orientation="vertical"
	android:layout_width="fill_parent" android:layout_height="fill_parent"
	xmlns:android="http://schemas.android.com/apk/res/android">

		<net.dague.astro.views.Diarama android:id="@+id/diarama"
			android:layout_width="fill_parent" android:layout_height="150dp"
			android:layout_margin="5dp"
			android:src="@drawable/sun_icon"
			/>
		<Button android:id="@+id/time_button"
			style="@style/AstroButton"
			android:text="@string/time_text"
			android:layout_width="fill_parent"
			></Button>
		<Button android:id="@+id/jupiter_button"
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Layout Containers

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Layout Containers
Resources

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Layout Containers
Resources
Styles

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Layout Containers
Resources
Styles
Display Independent Pixels

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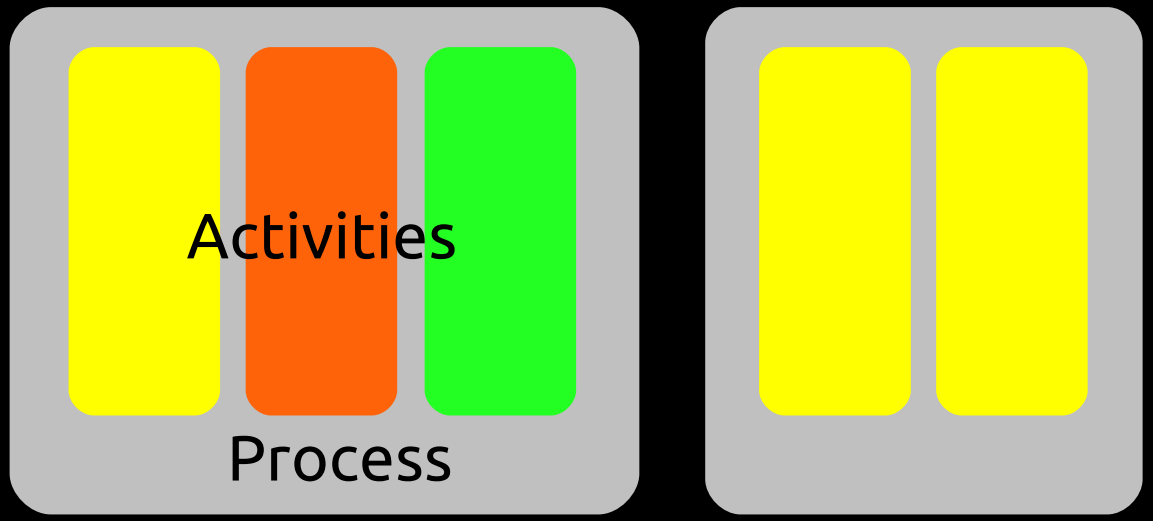
Layout Containers
Resources
Styles
Display Independent Pixels
Custom View

Second Activity

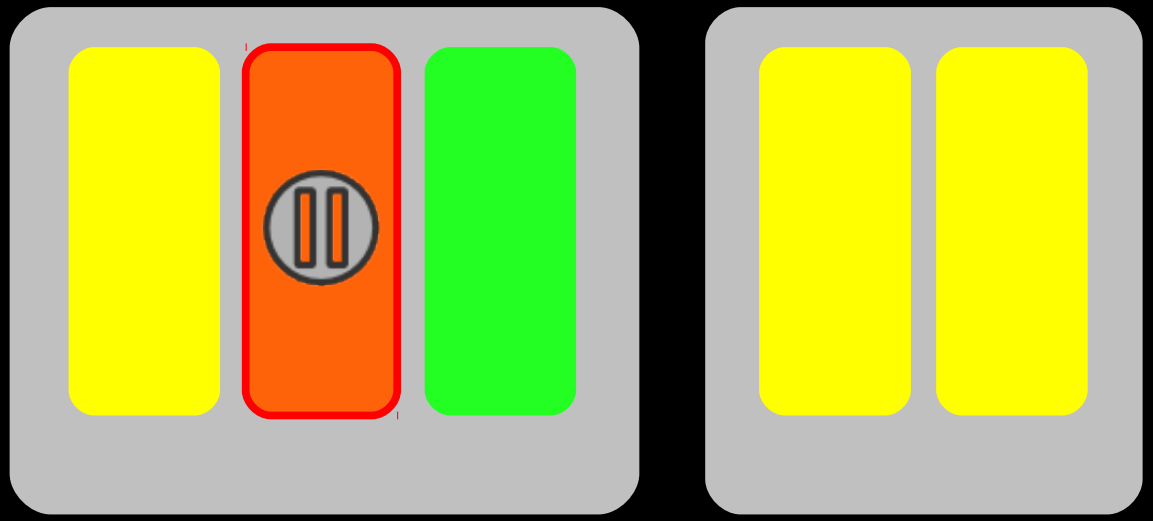
The Illusion Multitasking

User Visible Screens



The Illusion Multitasking

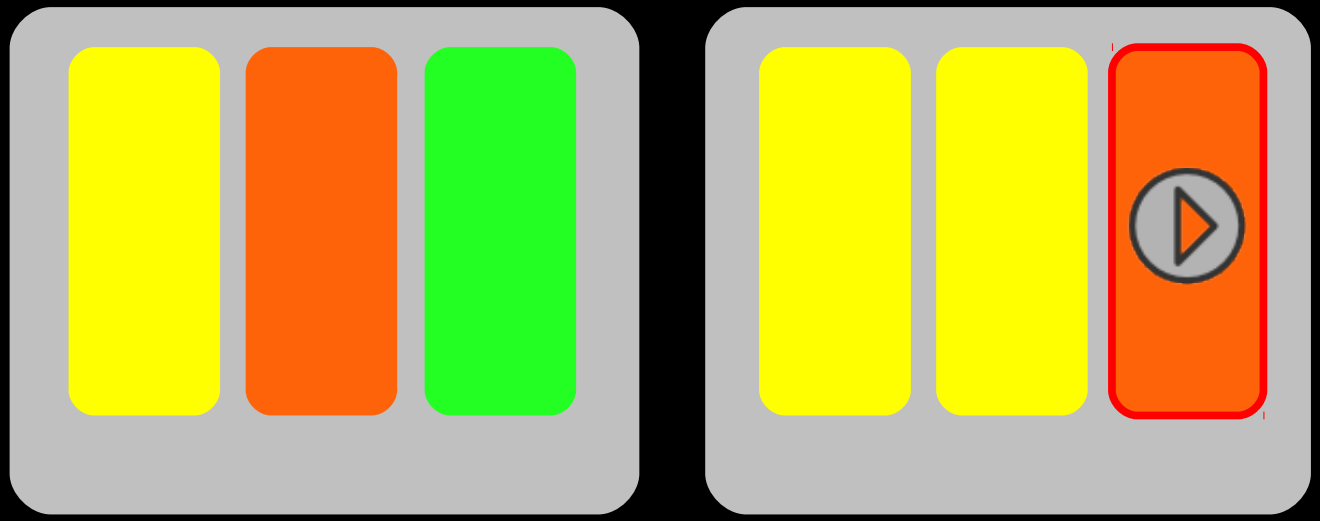
User Visible Screens



onPause() - gives you a chance to save a state bundle

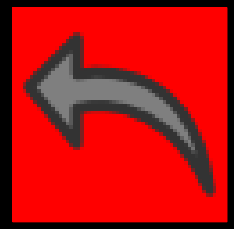
The Illusion Multitasking

User Visible Screens

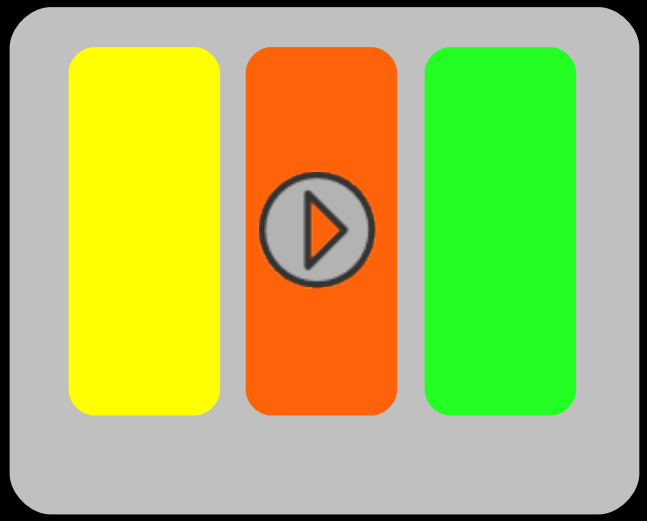


onCreate(bundle) - start up a new activity

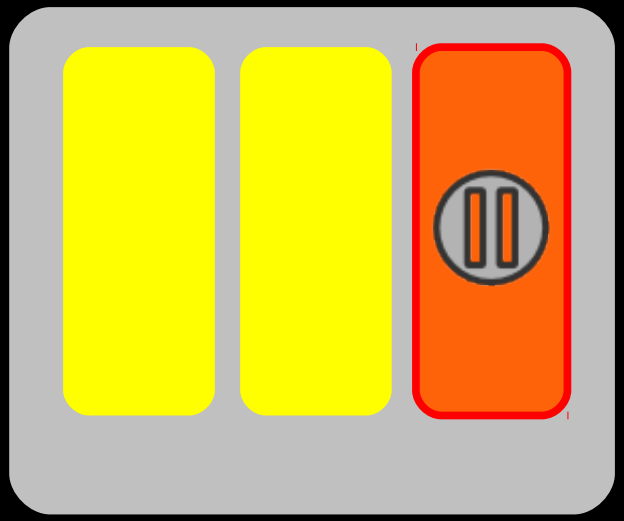
The Illusion Multitasking



User Visible Screens



onResume()

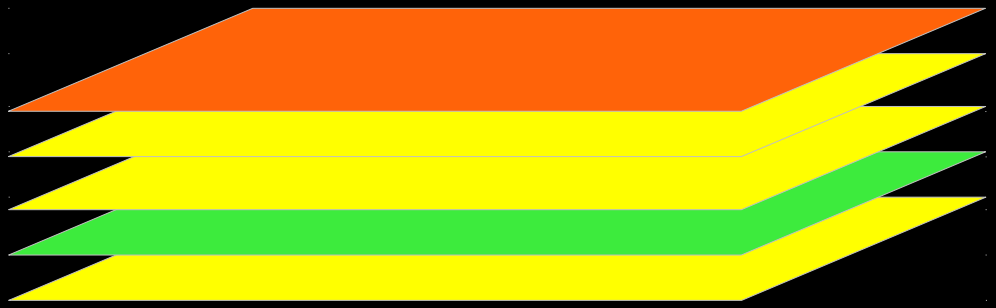


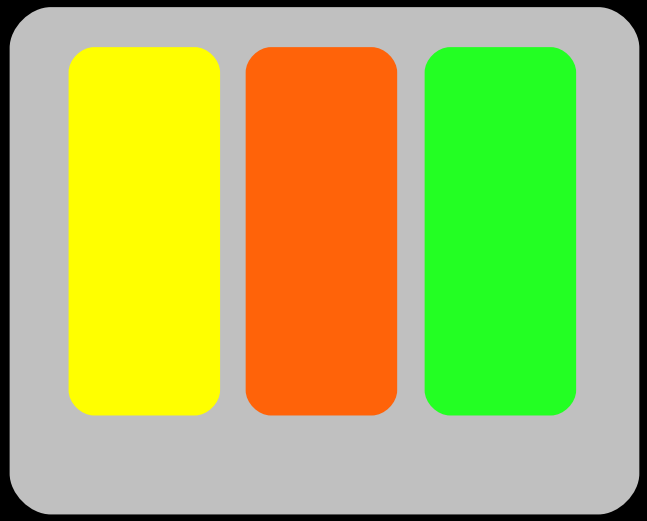
onPause()

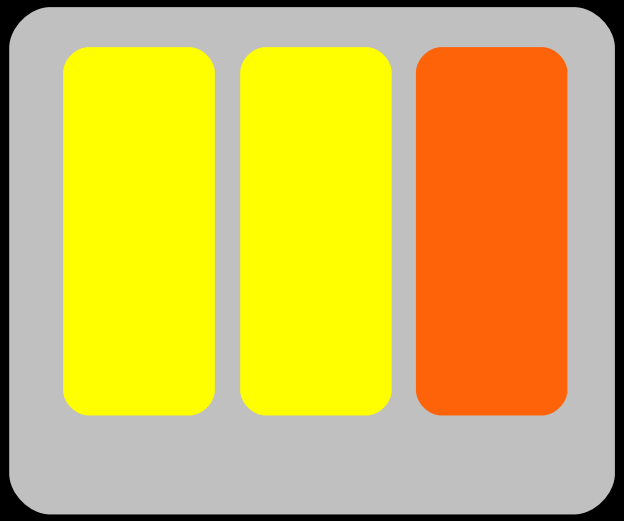
The Illusion Multitasking

Under Memory Preasure

User Visible Screens



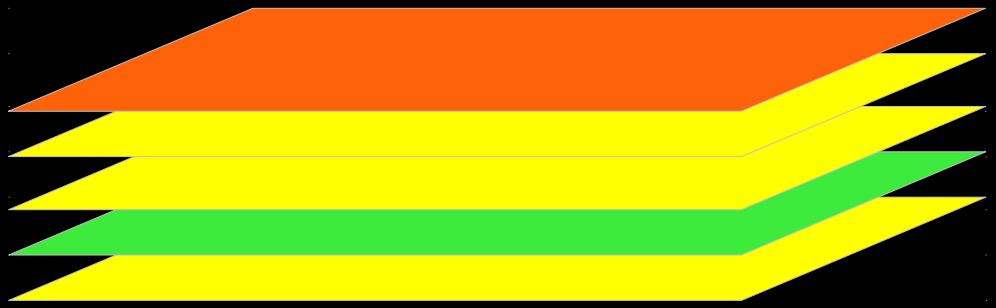


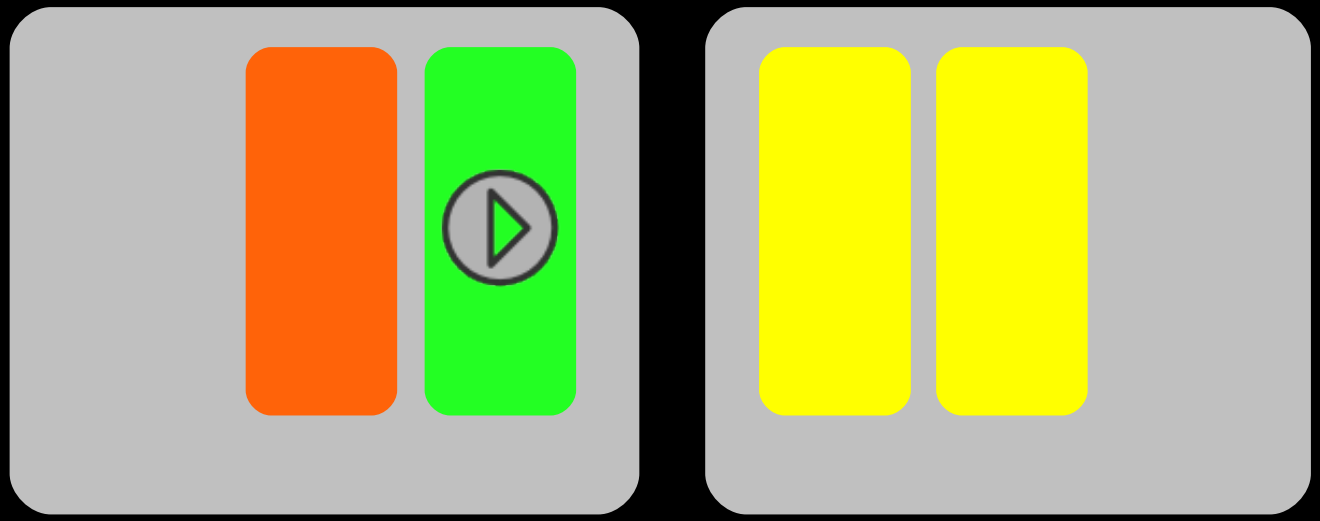


onStop() ?
onDestroy() ?
no warning?

The Illusion Multitasking

User Visible Screens

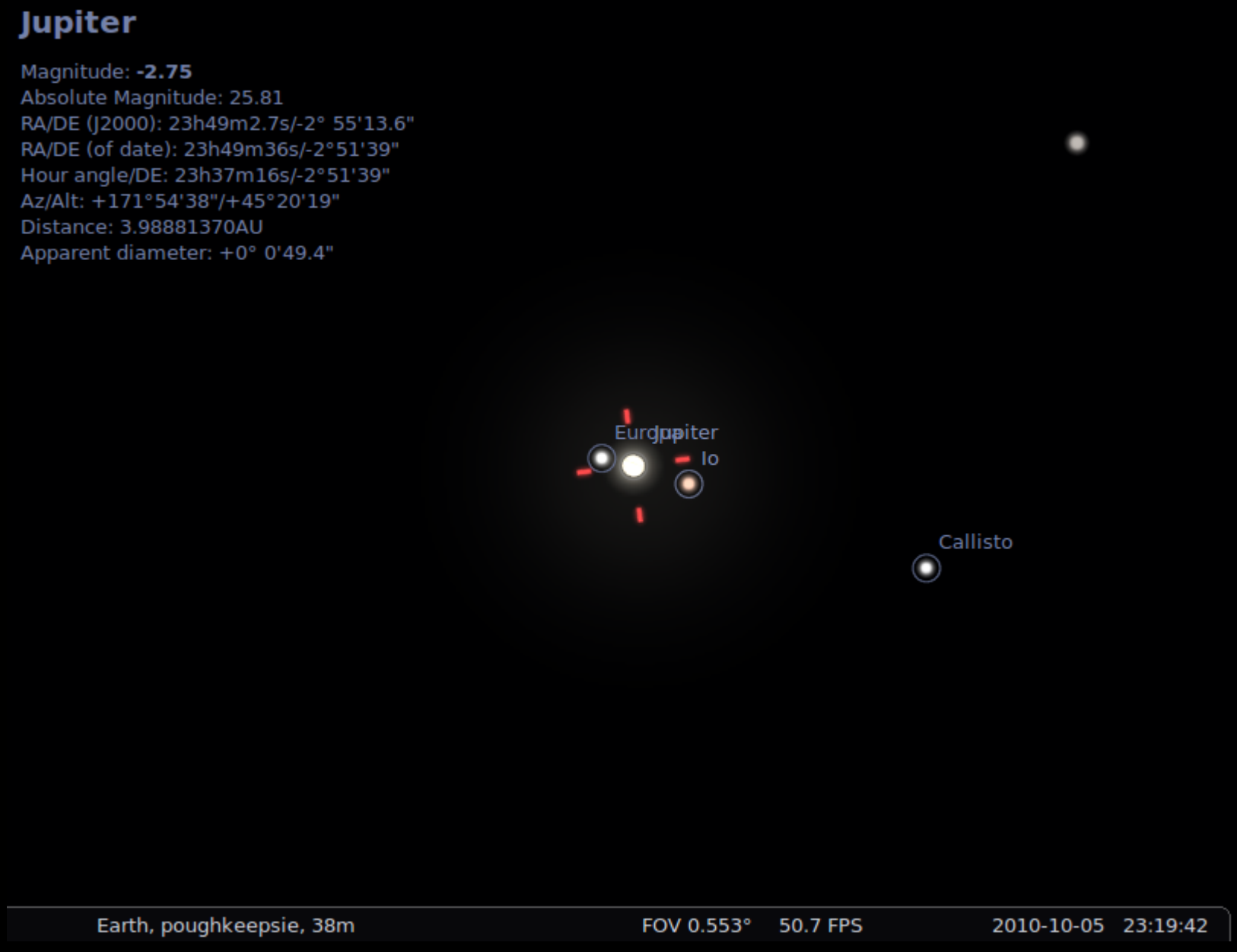




onCreate(bundle) - you did save state correctly, right?

More Advanced Graphics

What Other Open Source Exists?



Words you never want to read

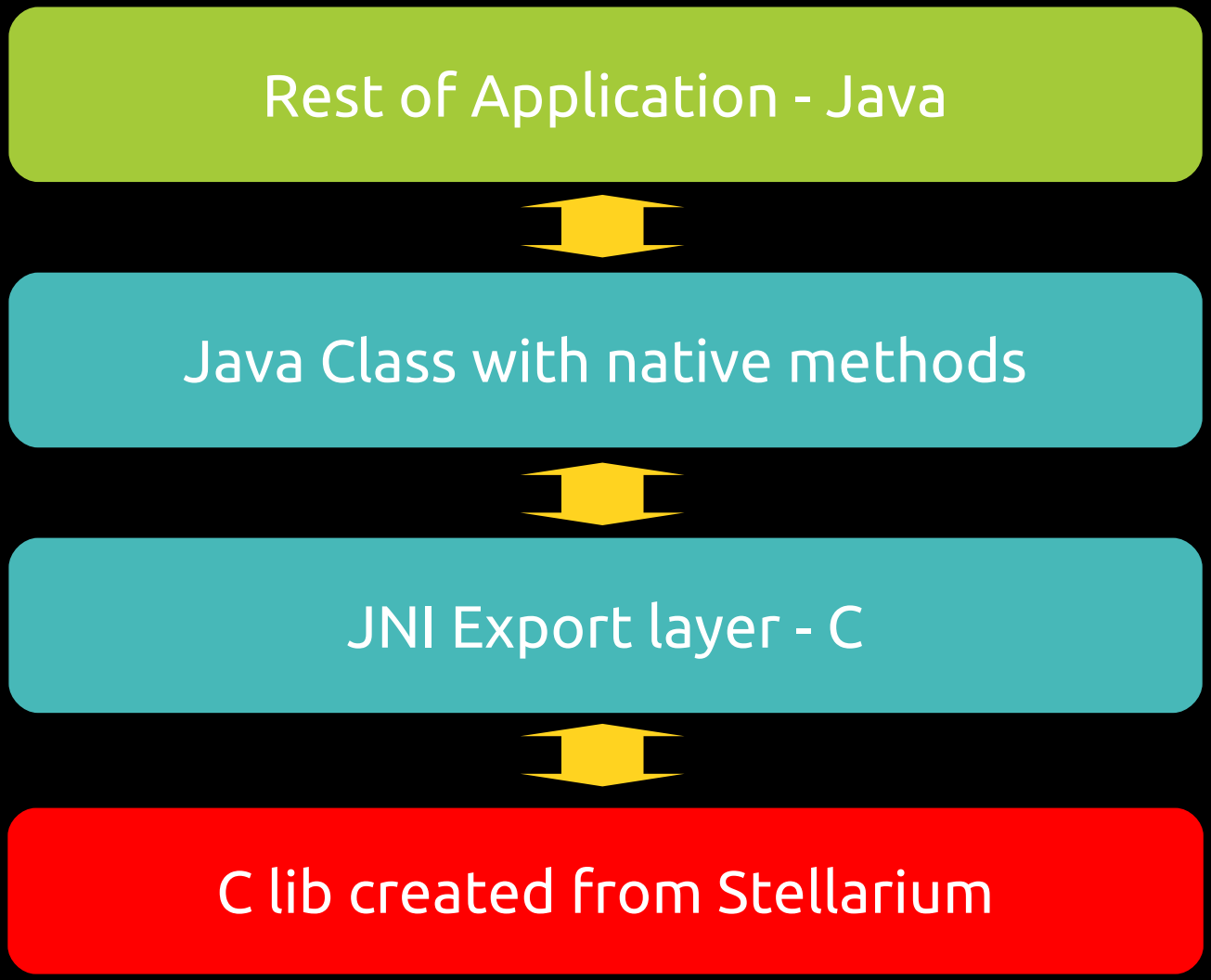
/***

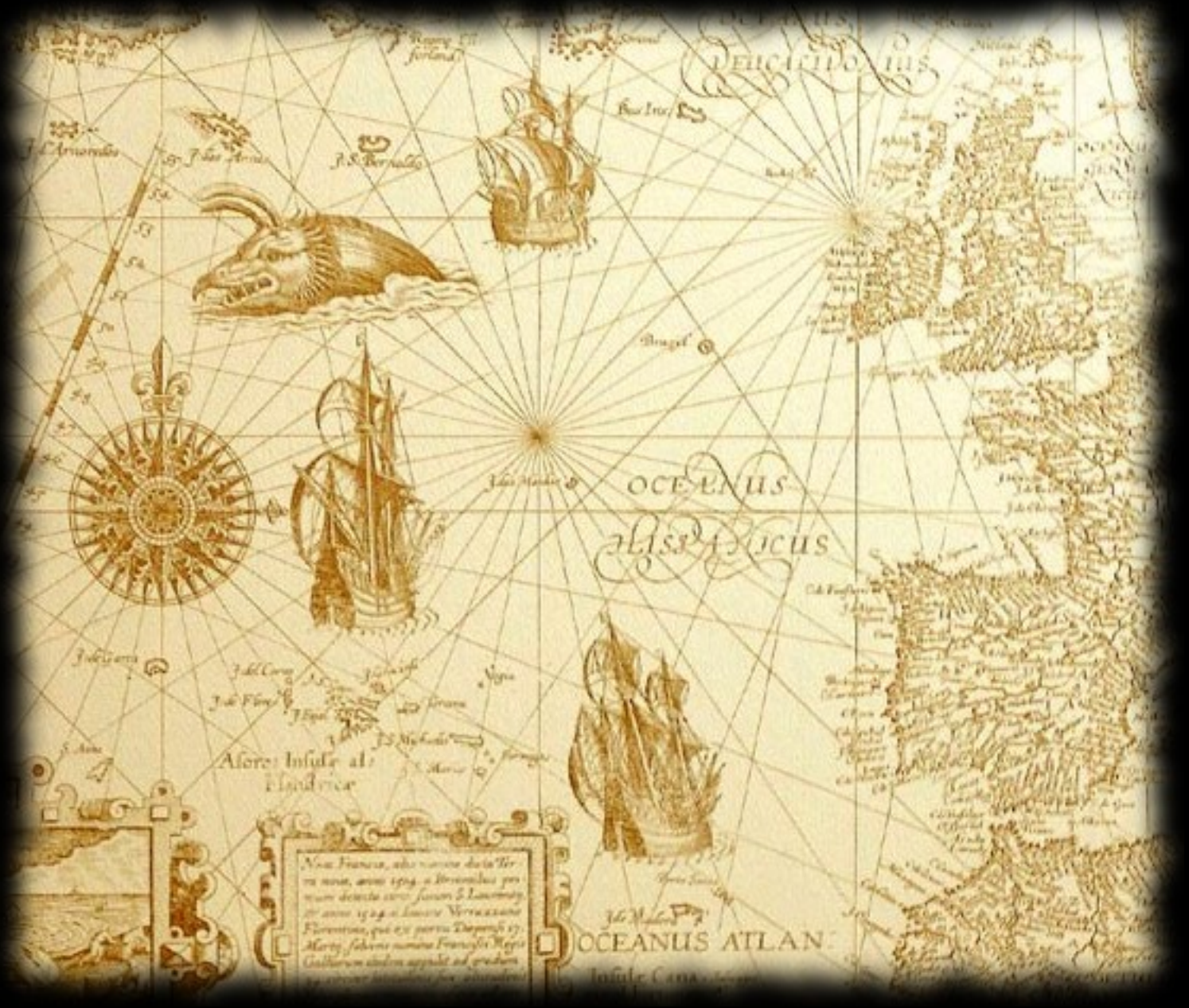
The L1 theory of the galilean satellites
by Valery Lainey can be found at
ftp://ftp.imcce.fr/pub/ephem/satel/galilean/L1

I (Johannes Gajdosik) have just taken the Fortran code and data
obtained from above and rearranged it into this piece of software.

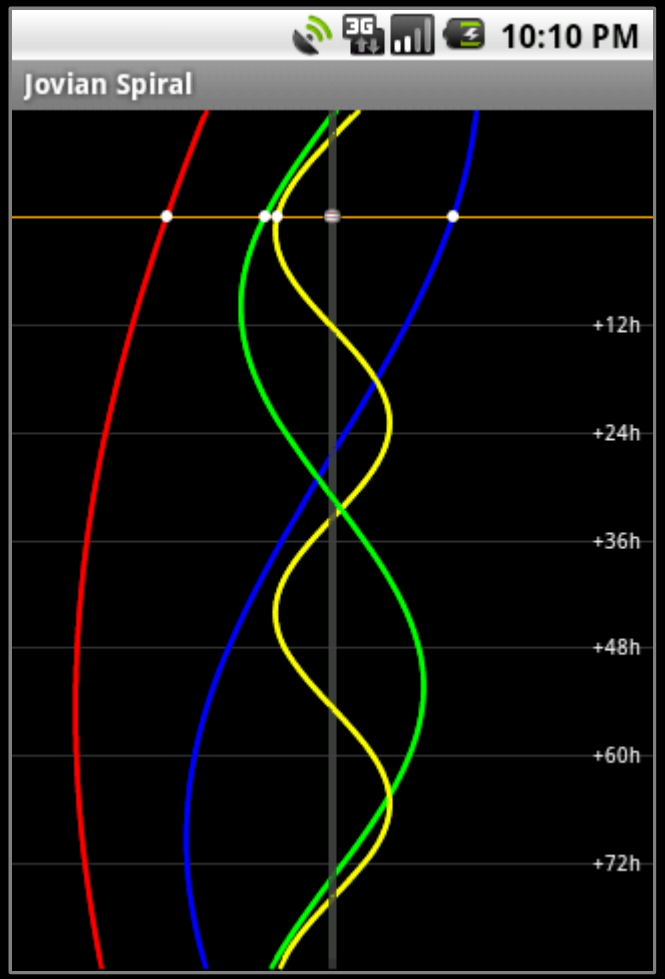
I can neigther allow nor forbid the usage of the L1 theory.
The copyright notice below covers not the work of Valery Lainey
but just my work, that is the compilation of the L1 theory
into the software supplied in this file.

Going Native



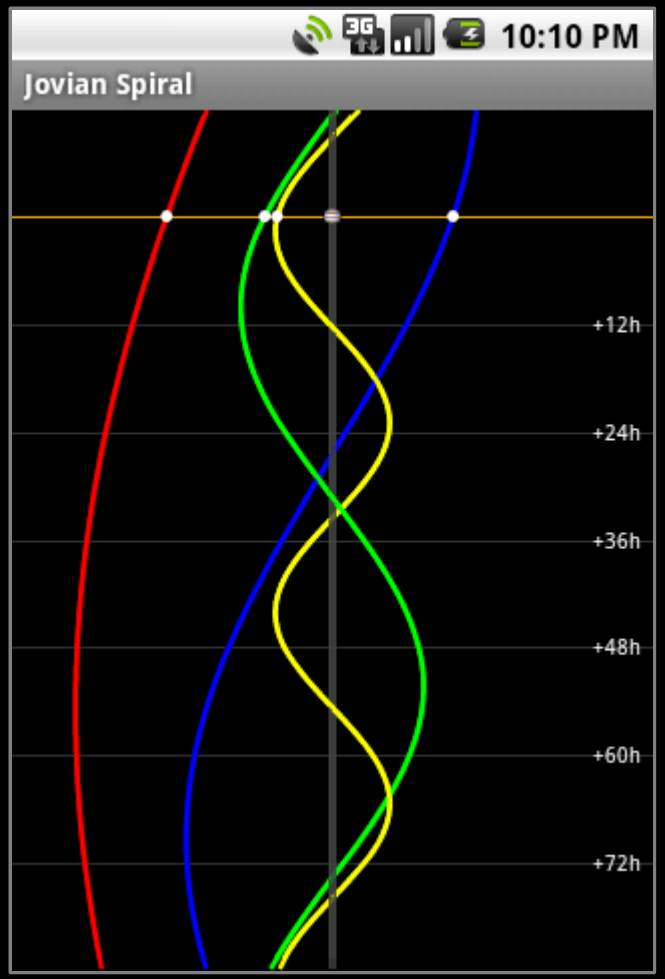

OCEANUS
OCEANUS ATLAN

Computational Time



- 120 points per curve
- Pure Computation
  - HTC Hero - 17s
  - Droid 1 - 12s
  - Nexus One - 8s
- 5 Second Rule

Dance of the Threads



JovianSpiralView

Main UI

JovianThread

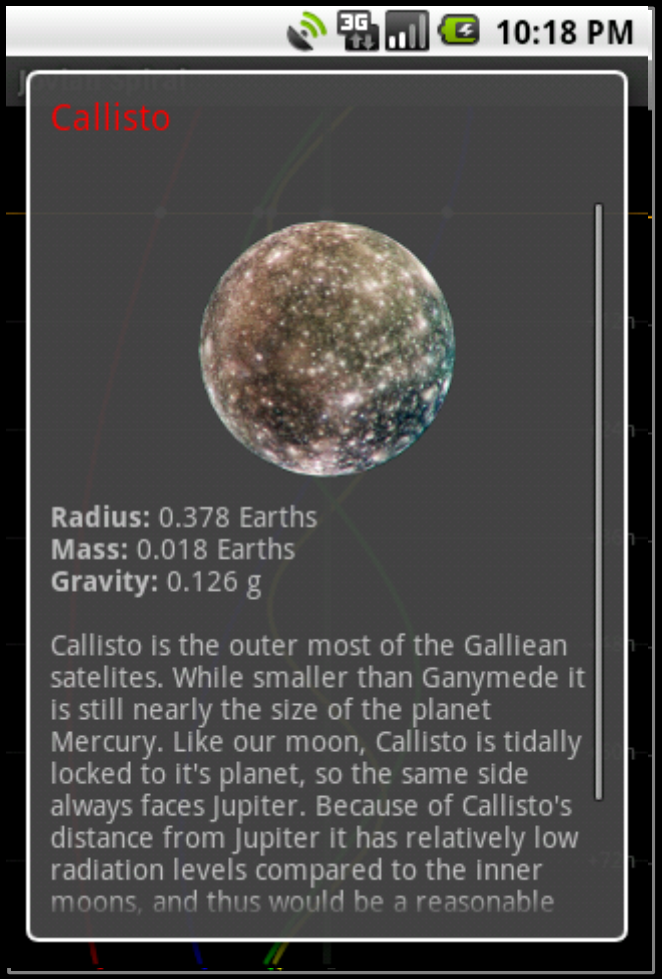
Draws to UI
Handles Animations
Uses Looper

JovianCalculator

Background
Data Cruncher

SQLite

Detecting Touch



Thinking of the Possibilities

What Makes a Good Mobile Application?

Things to Remember With Android

- No Save
- No Quit
- No foreground processing
- You will be interupted, plan accordingly

Learning More

- http://developer.android.com
- http://android-developers.blogspot.com
- http://github.com/sdague/where-is-io