



# Scaling Up

## 2002 CfCP Space Explorers Yerkes Winter Institute

Dates Friday December 27 – Sunday December 29, 2002

	Instructor	Day Lab	Night Lab	Location
CB	Charles Brass	(Roaming)		
JC	Juan Collar	Light Bulbs in the Sun	Cloudy- Lecture	Upstairs (day)
RD	Richard Dreiser	(PM only)	10 Inch	South Lawn
WF	Bill Fisher	Sugar Cubes		Basement South
WG	Walter Glogowski	Sugar Cubes		Basement South
AH	Al Harper	(Roaming)		
EK	Ed Kibblewhite	(PM only)	24 Inch	24" dome
RL	Randy Landsberg	Balloon Lift		Basement North
AP	Andy Puckett	Light Bulbs in the Sun		Upstairs
JR	Jonathan Rosner	(Sat PM only)	Balloon Radio	TBD
PW	Phil Wisecup	(Roaming)		

	Friday December 27	Saturday December 28	Sunday December 29 (Analysis & Presentations)
9-11AM		AM Labs	Analysis Groups
Lunch 11:45-1PM	Noon Lab Instructor Meeting		
1:30- 2:30PM		AM Labs Recap	1:30 – 3:00PM
3-5PM		Afternoon Day Labs	Presentations & Closing
	→		↓
5:30PM	→		
Dinner 5:15- 6:30PM			
	→		
8:30- 10:30PM	PM Labs	PM Labs	
	→		

	Group 1	Group 2	Group 3
Friday Afternoon (Analysis Lab)	LIGHT BULBS IN THE SUN	BALLOONS TO LIFT TOPHAT	SUGAR CUBES
Saturday AM	BALLOONS TO LIFT TOPHAT	SUGAR CUBES	LIGHT BULBS IN THE SUN
Saturday Afternoon	SUGAR CUBES	LIGHT BULBS IN THE SUN	BALLOONS TO LIFT TOPHAT

## Group 1

Blakey, Melissa  
Howard, Javal  
Jones, Lynn  
McDonald, Larry  
Montgomery, Paula  
Stevens, Erica  
Smith, Christopher

## Group 2

Brownlee, Monashae  
Clay, Derrick  
Dillard, Jessica  
Gordon, Timotheus  
Onisemoh, Jeminat  
Sweeten, Albert  
Dewberry, Samantha

## Group 3

Larkin, Danielle  
Lucas Arron  
Mathis, Jameal  
Hall, Ashley  
Hayes, Virginia  
Price, Jimmie  
Wilcoxon, Tamela

**Group 1 Lab Rotation (Friday, Saturday, Sunday)**

When	What	Where	Who
<b>Friday December 27</b>			
3 – 5 PM	Light Bulbs in the Sun	Upstairs	AP & JC
7:30-8:30 (Recap)	Light Bulbs in the Sun	Upstairs	AP & JC
8:30-10:30	Night Lab - assignments depend on weather		
<b>Saturday December 28</b>			
9AM-11AM	Balloon Lift	Basement North	RL
1:30-2:30PM (Recap)	Balloon Lift	Basement North	RL
3 – 5 PM	Sugar Cubes	Basemet South	WG
7:30-8:30 (Recap)	Sugar Cubes	Basemet South	WG
8:30-10:30	Night Lab - assignments depend on weather		EK, JR, RD
<b>Sunday December 29</b>			
9AM-11AM	Analysis Group Light Bulbs in the Sun	Upstairs	AP & JC
1:30-3:00PM	Presentations	Upstairs	AP & JC
	Closing		

**Note: Night labs depend on the weather.**

**Group 1**

Blakey, Melissa  
Howard, Javal  
Jones, Lynn  
McDonald, Larry  
Montgomery, Paula  
Stevens, Erica  
Smith, Christopher

**Group 2 Lab Rotation (Friday, Saturday, Sunday)**

When	What	Where	Who
<b>Friday December 27</b>			
<b>3 – 5 PM</b>	<b>Balloon Lift</b>	<b>Basement North</b>	<b>RL</b>
<b>7:30-8:30 (Recap)</b>	<b>Balloon Lift</b>	<b>Basement North</b>	<b>RL</b>
<b>8:30-10:30</b>	<b>Night Lab - assignments depend on weather</b>		
<b>Saturday December 28</b>			
<b>9AM-11AM</b>	<b>Sugar Cubes</b>	<b>Basement South</b>	<b>WG</b>
<b>1:30-2:30PM (Recap)</b>	<b>Sugar Cubes</b>	<b>Basement South</b>	<b>WG</b>
<b>3 – 5 PM</b>	<b>Light Bulbs in the Sun</b>	<b>Upstairs</b>	<b>AP &amp; JC</b>
<b>7:30-8:30 (Recap)</b>	<b>Light Bulbs in the Sun</b>	<b>Upstairs</b>	<b>AP &amp; JC</b>
<b>8:30-10:30</b>	<b>Night Lab - assignments depend on weather</b>		<b>EK, JR, RD</b>
<b>Sunday December 29</b>			
<b>9AM-11AM</b>	<b>Analysis Group Balloon Lift</b>	<b>Basement North</b>	<b>RL</b>
<b>1:30-4:30PM</b>	<b>Jigsaw Sessions</b>		
<b>1:30-3:00PM</b>	<b>Presentations</b>	<b>Basement North</b>	<b>RL</b>
	<b>Closing</b>		

Note: Night labs depend on the weather.

**Group 2**

Brownlee, Monashae  
 Clay, Derrick  
 Dewberry, Samantha  
 Dillard, Jessica  
 Gordon, Timotheus  
 Onisemoh, Jeminat  
 Sweeten, Albert

**Group 3 Lab Rotation (Friday, Saturday, Sunday)**

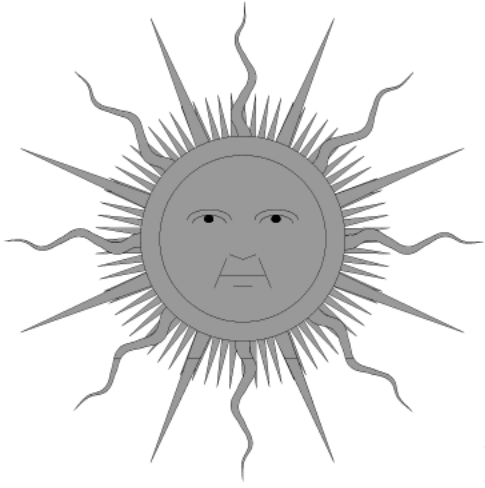
When	What	Where	Who
<b>Friday December 27</b>			
3 – 5 PM	Sugar Cubes	Basement South	WG
7:30-8:30 (Recap)	Sugar Cubes	Basement South	WG
8:30-10:30	Night Lab - assignments depend on weather		
<b>Saturday December 28</b>			
9AM-11AM	Light Bulbs in the Sun	Upstairs	AP & JC
1:30-2:30PM (Recap)	Light Bulbs in the Sun	Upstairs	AP & JC
3 – 5 PM	Balloon Lift	Basement North	RL
7:30-8:30 (Recap)	Balloon Lift	Basement North	RL
8:30-10:30	Night Lab - assignments depend on weather		EK, JR, RD
<b>Sunday December 29</b>			
9AM-11AM	Analysis Group Sugar Cubes	Basement South	WG
1:30-3:00PM	Presentations	Basement South	WG
	Closing		

**Note: Night labs depend on the weather**

Group 3

Larkin, Danielle  
Lucas Arron  
Mathis, Jameal  
Hall, Ashley  
Hayes, Virginia  
Price, Jimmie  
Wilcoxon, Tamela





### Basic Solar Data

Distance from Earth to Sun:	$1 \text{ AU} = 1.5 \times 10^{11} \text{ m}$
Solar Mass:	$2 \times 10^{30} \text{ kg}$
Solar Radius:	$7 \times 10^8 \text{ m}$
Luminosity of Sun:	$3.9 \times 10^{26} \text{ W /s}$
Surface Temperature:	5900 K
Central Temperature:	$1.5 \times 10^7 \text{ K}$
Central Density:	$1.5 \times 10^5 \text{ kg}^3$
Surface Gravitational Acceleration:	$274 \text{ m /s}^2$