

# Fall 2016 Python Training

Carlos Cruz, Jules Kouatchou, and Brent Smith

[carlos.a.cruz@nasa.gov](mailto:carlos.a.cruz@nasa.gov), [Jules.Kouatchou@nasa.gov](mailto:Jules.Kouatchou@nasa.gov), [brent.smith@nasa.gov](mailto:brent.smith@nasa.gov)



Goddard Space Flight Center

September 19, 2016

# Who Are We?

- Jules Kouatchou (Computational Scientist, Occasional Python User)
- E. Brent Smith (Programmer and Scientific, Daily Python User)
- Carlos A. Cruz ()

# Training Objectives

We want to:

- 1 Introduce the basic concepts of Python programming
- 2 Create functions and modules
- 3 Manipulate Python objects (list, tuple, arrays, etc.)
- 4 Handle files
- 5 Do plotting

# What we will Cover

- 1 Core principles of Python: Day 1
- 2 Data manipulation with Python: Day 2

# Target Audience

Python User	Day 1	Day 2
Beginner	X	X
Intermediate		X

# What We Expect from You

- Have your own laptop.
- Install on your system a Python distribution (such as Anaconda) that should at least have iPython, Numpy, Matplotlib.
- Install the package Git
- Be able to create/edit files on your platform
- Do the examples yourself as we move along
- Ask questions

# Obtaining the Materials

You can obtain all the materials by issuing the command:

```
git clone https://github.com/JulesKouatchou/LRC_Fall16
```

You will then get on your platform the directory LRC\_Fall16.

# Beyond the Agenda

There are few topics that will not be covered but are worth looking at.  
Presentations were prepared on:

- 1 Datetime Module
- 2 F2Py








# Informal Self-Assessment

At the end of Day 1, you might consider taking a 25-question test at:

<http://www.afterhoursprogramming.com/tests/practice/Python/>

# Useful Pointers I

-  Python Programming - Introduction  
<http://www.youtube.com/watch?v=72RKMMYLxS8>
-  A Hands-On Introduction to Python for Beginning Programmers  
[https://www.youtube.com/watch?v=rkx5\\_MRAV3A](https://www.youtube.com/watch?v=rkx5_MRAV3A)
-  A Beginner's Python Tutorial  
<http://www.sthurlow.com/python/>
-  Invent with Python  
<http://inventwithpython.com/chapters/>
-  Think Python: How to Think Like a Computer Scientist  
<http://greenteapress.com/thinkpython/html/index.html>

# Useful Pointers II



Hans Petter Langtangen.

*A Primer on Scientific Programming with Python.*  
Springer, 2009.



Johnny Wei-Bing Lin.

*A Hands-On Introduction to Using Python in the Atmospheric and Oceanic Sciences.*  
<http://www.johnny-lin.com/pyintro>, 2012.



Drew McCormack.

*Scientific Scripting with Python.*  
2009.