































# Hudson River tides








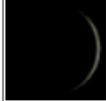



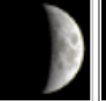



















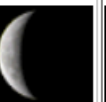
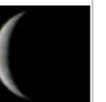
When do you think we'll see the highest high tides?

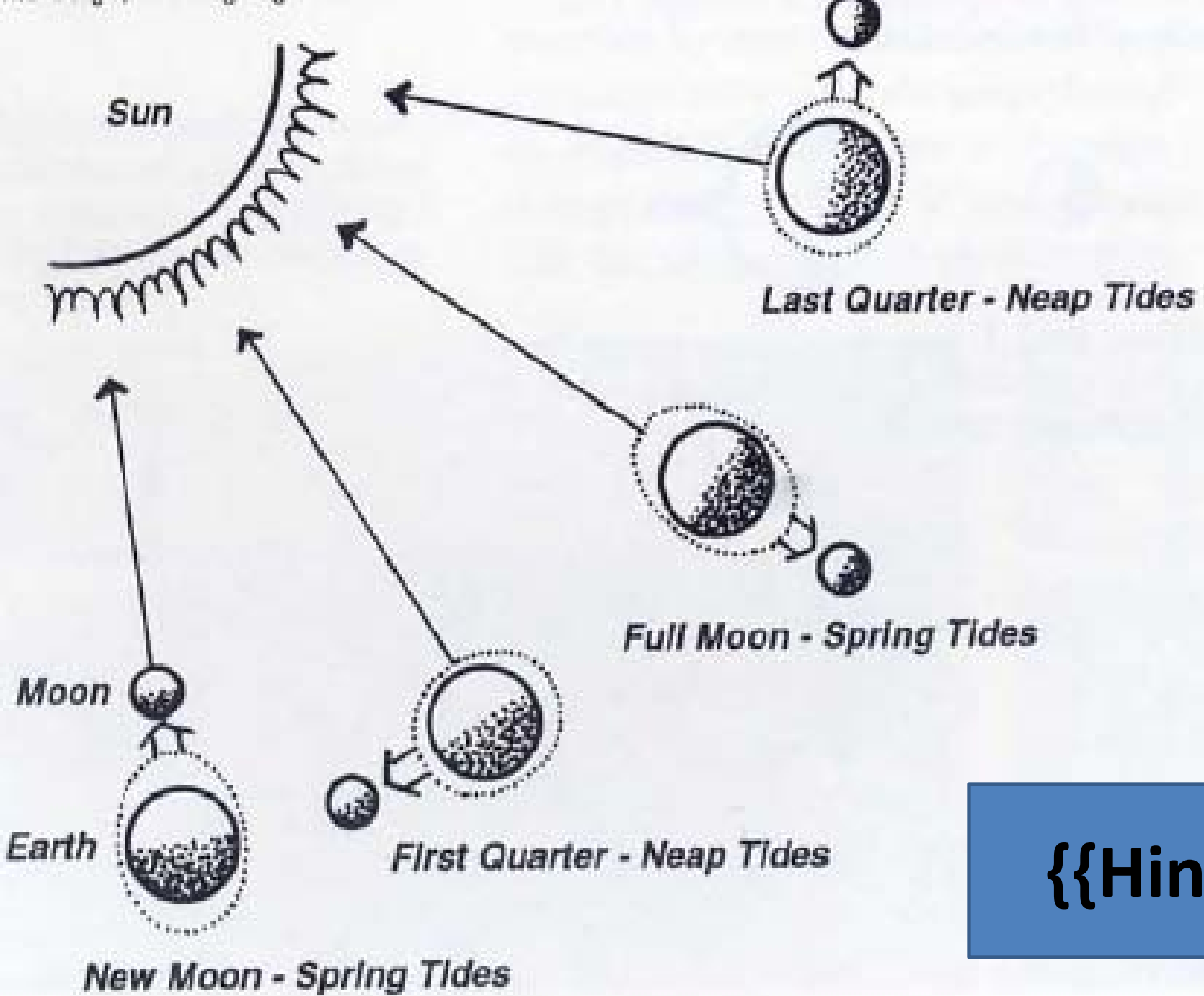
When should we expect the lowest high tides?

Sept 2013

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1 	2 	3 	4 	5 	6 	7 
8 	9 	10 	11 	12 	13 	14 
15 	16 	17 	18 	19 	20 	21 
22 	23 	24 	25 	26 	27 	28 
29 	30 					

Oct 2013

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1 	2 	3 	4 	5 
6 	7 	8 	9 	10 	11 	12 
13 	14 	15 	16 	17 	18 	19 
20 	21 	22 	23 	24 	25 	26 
27 	28 	29 	30 	31 		



**{{Hint}}**

# Tide tables



**THE BATTERY, NY StationId: 8518750**

Daily Tide Prediction in Feet

Time Zone: LST/LDT

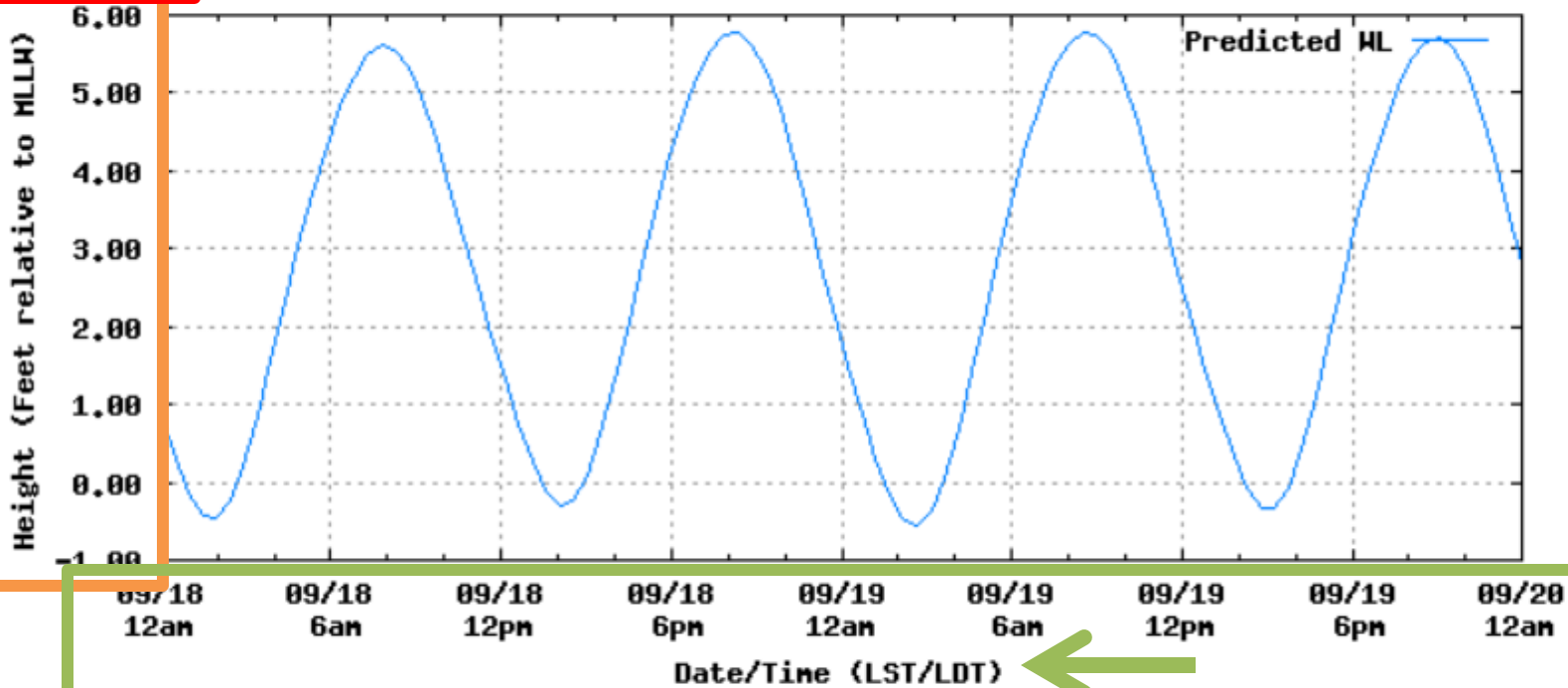
Datum: MLLW

◀ 2013/09/18 - 2013/09/19 ▶

[Back to Station Listing](#)

[Bookmark](#)

[Help](#)



Disclaimer: These data are based upon the latest information available as of the date of your request, and may differ from the published tide tables.

Begin Date:

◀ Sep 18 2013 ▶

Time Range:

◀ Daily ▶

Time Zone:

LST/LDT

Data Units:

Feet

[Show Advanced Options](#)

# THE BATTERY, NY StationId: 8518750

Daily Tide Prediction in Feet

Time Zone: LST/LDT

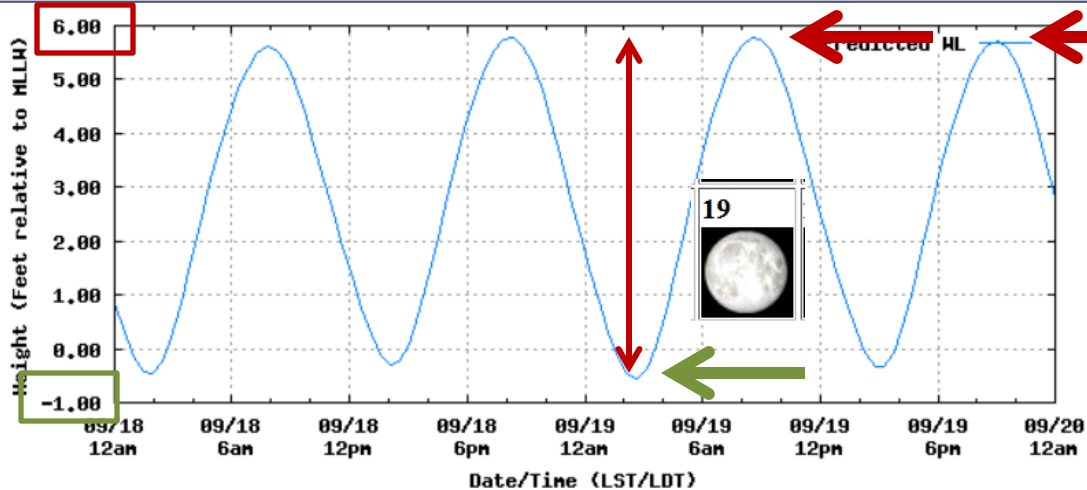
Datum: MLLW

◀ 2013/09/18 - 2013/09/19 ▶

[Back to Station Listing](#)

[Bookmark](#)

[Help](#)



Disclaimer: These data are based upon the latest information available as of the date of your request, and may differ from published tables.

Begin Date: Sep 18 2013 Time Range: Daily Time Zone: LST/LDT Data Units: Feet [Show Advanced Options](#)

# THE BATTERY, NY StationId: 8518750

Daily Tide Prediction in Feet

Time Zone: LST/LDT

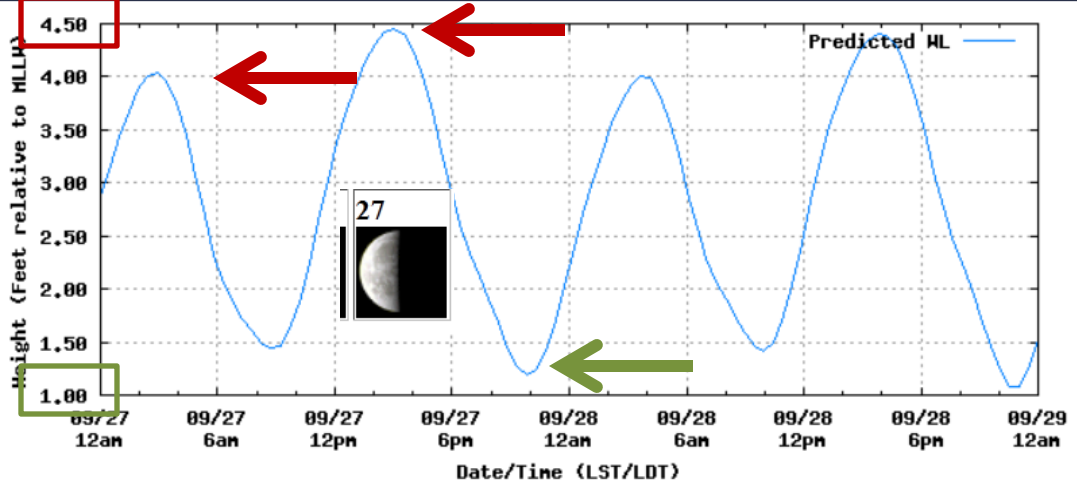
Datum: MLLW

◀ 2013/09/27 - 2013/09/28 ▶

[Back to Station Listing](#)

[Bookmark](#)

[Help](#)



Disclaimer: These data are based upon the latest information available as of the date of your request, and may differ from the published tide tables.

Begin Date: Sep 27 2013 Time Range: Daily Time Zone: LST/LDT Data Units: Feet [Show Advanced Options](#)

## Sept 2013

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

# THE BATTERY, NY StationId: 8518750

Daily Tide Prediction in Feet

Time Zone: LST/LDT

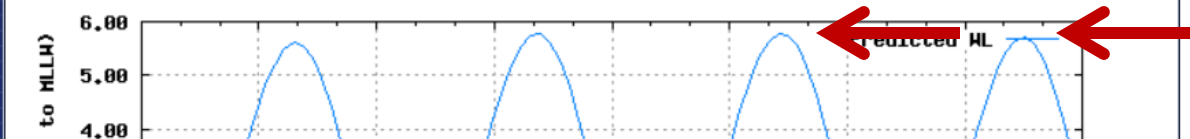
Datum: MLLW

◀ 2013/09/18 - 2013/09/19 ▶

[Back to Station Listing](#)

[Bookmark](#)

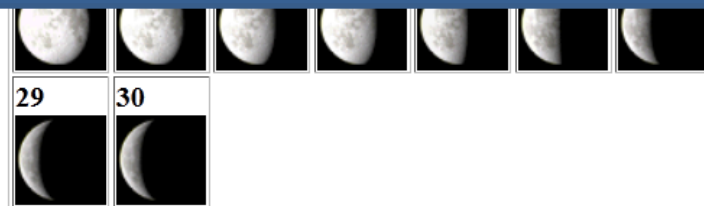
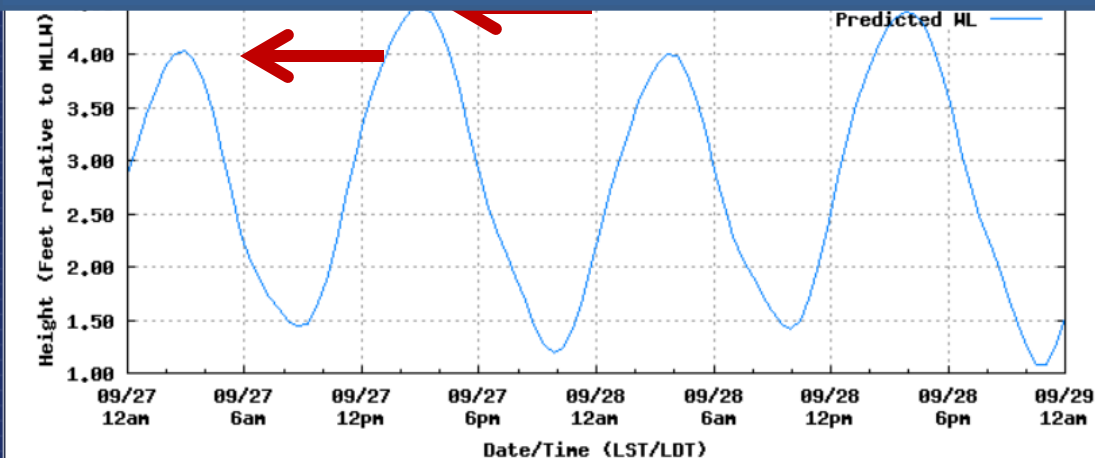
[Help](#)



What about the **new moon**?

How high do you think the **high and low tides** will get?

Make a prediction & write it down!



Disclaimer: These data are based upon the latest information available as of the date of your request, and may differ from the published tide tables.

Begin Date:    Time Range:  Time Zone:  Data Units:  [Show Advanced Options](#)

# THE BATTERY, NY StationId: 8518750

Daily Tide Prediction in Feet

Time Zone: LST/LDT

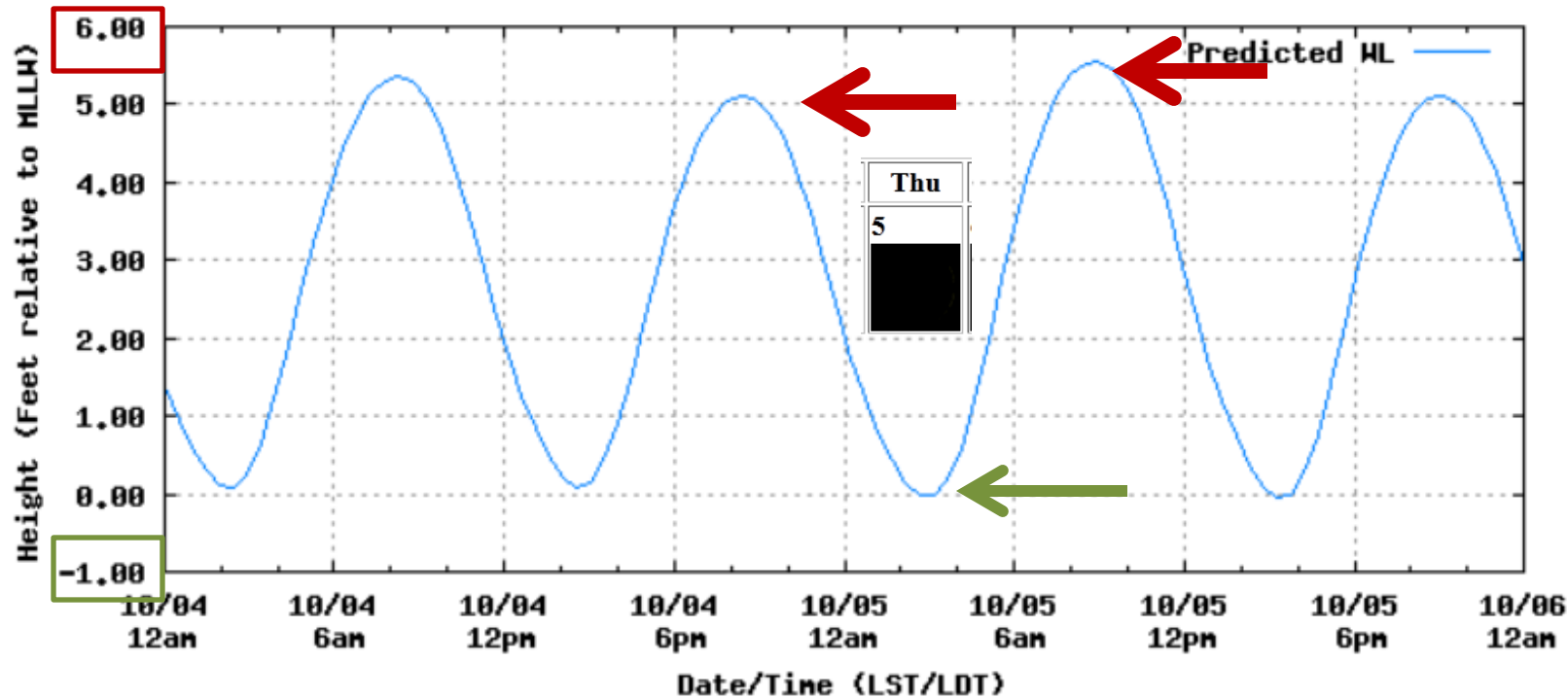
Datum: MLLW

◀ 2013/10/04 - 2013/10/05 ▶

[Back to Station Listing](#)

[Bookmark](#)

[Help](#)



Disclaimer: These data are based upon the latest information available as of the date of your request, and may differ from the published tide tables.

Begin Date:

◀ Oct ▼ 04 ▼ 2013 ▼ ▶

Time Range:

◀ Daily ▼ ▶

Time Zone:

LST/LDT ▼

Data Units:

Feet ▼

[Show Advanced Options](#)



# September

# October

Time	Height	Time	Height
AM 0.0	0	ft	cm
AM 5.0	152		
PM 0.1	3		
PM 5.6	171		



AM -0.3	-9		
AM 5.3	162		
PM -0.2	-6		
PM 5.8	177		

01:35 AM	0.4	12	18	01:48 AM	-0.5	-15
07:41 AM	4.7	143	W	07:54 AM	5.6	171
01:40 PM	0.6	18		02:11 PM	-0.3	-9
07:49 PM	5.1	155		08:13 PM	5.8	177

02:15 AM	0.3	9	19	02:35 AM	-0.6	-18
08:18 AM	4.9	149	Th	08:40 AM	5.8	177
02:24 PM	0.4	12		03:02 PM	-0.4	-12
08:22 PM	5.2	162	O	08:59 PM	5.7	174

02:54 AM	0.1	3	20	03:21 AM	-0.5	-15
08:52 AM	5.1	155	F	09:24 AM	5.8	177
03:06 PM	0.3	9		03:50 PM	-0.3	-9
08:54 PM	5.2	158		09:45 PM	5.5	168

03:32 AM	0.0	0	21	04:04 AM	-0.4	-11
09:24 AM	5.2	158	Sa	10:09 AM	5.7	174
03:48 PM	0.2	6		04:36 PM	-0.1	-3
09:26 PM	5.2	158		10:32 PM	5.7	174

04:08 AM	0.0	0	22	04:46 AM	0.1	-3
09:57 AM	5.3	162	Su	10:55 AM	5.5	168
04:29 PM	0.2	6		05:22 PM	0.1	3
10:01 PM	5.1	155		11:22 PM	4.9	149



Time	Height	Time	Height
h m	ft	cm	
12:16 AM	0.7	21	16
Tu 06:24 AM	4.5	137	W
12:26 PM	0.8	24	
06:33 PM	4.8	146	

12:57 AM	0.4	12	2	12:57 AM	0.4	12
07:06 AM	4.8	146	W	07:35 AM	5.6	171
01:11 PM	0.5	15		01:54 PM	-0.2	-6
07:13 PM	4.9	149		07:54 PM	5.3	162

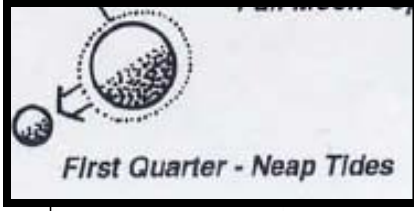
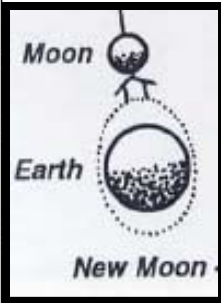
01:37 AM	0.2	6	3	01:37 AM	0.2	6
07:42 AM	5.1	155	Th	07:42 AM	5.1	155
01:56 PM	0.3	9		01:56 PM	0.3	9
07:49 PM	5.1	155		07:49 PM	5.1	155

02:17 AM	0.1	3	4	02:17 AM	0.1	3
08:16 AM	5.4	165	F	08:16 AM	5.4	165
02:41 PM	0.1	3		02:41 PM	0.1	3
08:25 PM	5.1	155		08:25 PM	5.1	155

02:57 AM	0.0	0	5	02:57 AM	0.0	0
08:49 AM	5.6	171	Sa	08:49 AM	5.6	171
03:25 PM	-0.1	-3		03:25 PM	-0.1	-3
09:01 PM	5.1	155		09:01 PM	5.1	155

03:37 AM	-0.1	-3	6	03:37 AM	-0.1	-3
09:25 AM	5.7	174	Su	09:25 AM	5.7	174
04:09 PM	-0.1	-3		04:09 PM	-0.1	-3
09:41 PM	5.0	152		09:41 PM	5.0	152

04:17 AM	-0.1	-3	7	04:17 AM	-0.1	-3
10:05 AM	5.7	174	M	10:05 AM	5.7	174
04:54 PM	-0.1	-3		04:54 PM	-0.1	-3
10:28 PM	4.9	149		10:28 PM	4.9	149



2013 Battery Park Tide Table



# September

# October

Time	Height	Time	Height
AM 0.0	0	ft	cm
AM 5.0	152		
PM 0.1	3		
PM 5.6	171		

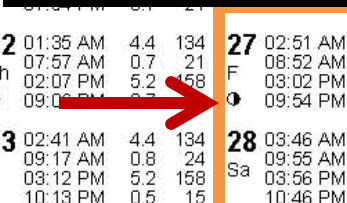


01:35 AM	0.4	12	18	01:48 AM	-0.5	-15
07:41 AM	4.7	149	W	07:54 AM	5.6	171
01:40 PM	0.6	18		02:11 PM	-0.3	-9
07:49 PM	5.1	155		08:13 PM	5.8	177

02:15 AM	0.3	9	19	02:35 AM	-0.6	-18
08:18 AM	4.9	149	Th	08:40 AM	5.8	177
02:24 PM	0.4	12		03:02 PM	-0.4	-12
08:22 PM	5.2	152	O	08:59 PM	5.7	174

02:54 AM	0.1	3	20	03:21 AM	-0.5	-15
08:52 AM	5.1	155	F	09:24 AM	5.8	177
03:06 PM	0.3	9		03:50 PM	-0.3	-9
08:54 PM	5.2	158		09:45 PM	5.5	168

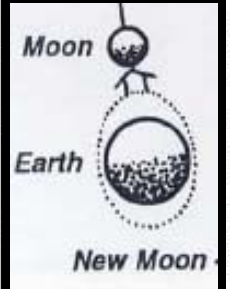
03:32 AM	0.0	0	21	03:51 AM	0.1	3
09:24 AM	5.2	158	Sa	10:09 AM	5.7	174
03:48 PM	0.2	6		04:36 PM	-0.1	-3
09:26 PM	5.2	158		10:32 PM	5.7	174



01:35 AM	4.4	134	27	02:51 AM	4.0	122
07:57 AM	0.7	21	F	08:52 AM	1.4	43
02:07 PM	5.2	158		03:02 PM	4.5	137
09:05 PM	0.5	15	O	09:54 PM	1.2	37

Time	Height	Time	Height
h	m	ft	cm
12:16 AM	0.7	21	16
06:24 AM	4.5	137	17
12:26 PM	0.8	24	
06:33 PM	4.8	146	

01:37 AM	0.2	6	3	01:37 AM	0.2	6
07:42 AM	5.1	155	Th	07:42 AM	5.1	155
01:56 PM	0.3	9		01:56 PM	0.3	9
07:40 PM	5.1	155		07:40 PM	5.1	155



02:17 AM	0.1	3	4	02:17 AM	0.1	3
08:16 AM	5.4	165	F	08:16 AM	5.4	165
02:41 PM	0.1	3		02:41 PM	0.1	3
08:25 PM	5.1	155		08:25 PM	5.1	155

02:57 AM	0.0	0	5	02:57 AM	0.0	0
08:49 AM	5.6	171	Sa	08:49 AM	5.6	171
03:25 PM	-0.1	-3		03:25 PM	-0.1	-3
09:01 PM	5.1	155		09:01 PM	5.1	155

03:37 AM	-0.1	-3	6	03:37 AM	-0.1	-3
09:25 AM	5.7	174	Su	09:25 AM	5.7	174
04:09 PM	-0.1	-3		04:09 PM	-0.1	-3
09:41 PM	5.0	152		09:41 PM	5.0	152



04:52 AM	4.8	146	14	04:52 AM	4.2	128
11:15 AM	0.3	9	M	11:06 AM	1.0	30
05:15 PM	5.2	158		04:53 PM	4.3	131
11:45 PM	-0.1	-3		11:35 PM	0.6	18

So...back to our question.  
**When do we see the highest high tides?**  
**When do we see the lowest high tides?**

2013 Battery Park Tide Table

September

October

**Most Extreme**

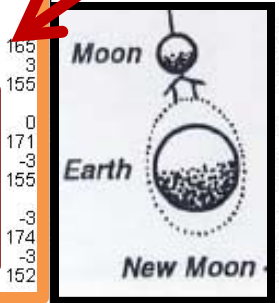
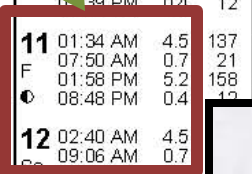
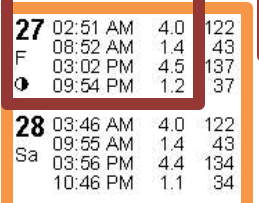
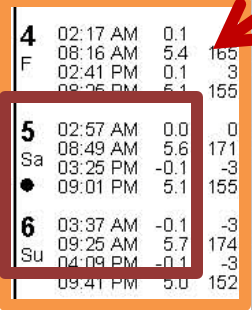
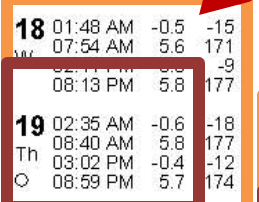
**Less Extreme**

Tide tables in both graphic and tabular format are available here:  
[http://tidesandcurrents.noaa.gov/tide\\_predictions.shtml?gid=62](http://tidesandcurrents.noaa.gov/tide_predictions.shtml?gid=62)

**Weaker**

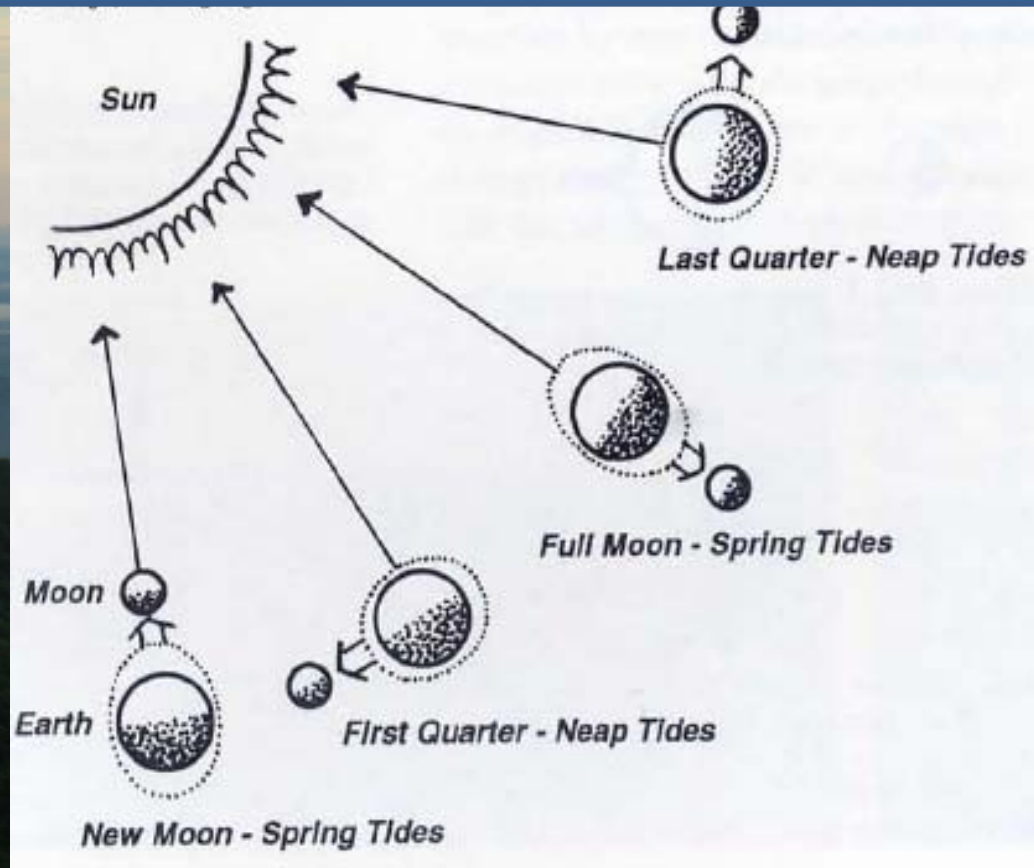
2013 Battery Park Tide Table

Time	Height	Time	Height
1 01:35 AM	0.4	12 01:35 AM	0.4
07:41 AM	4.7	12 07:41 AM	4.7
01:40 PM	0.6	12 01:40 PM	0.6
07:49 PM	5.1	12 07:49 PM	5.1
2 02:15 AM	0.3	13 02:15 AM	0.3
08:18 AM	4.9	13 08:18 AM	4.9
02:24 PM	0.4	13 02:24 PM	0.4
08:22 PM	5.2	13 08:22 PM	5.2
3 02:54 AM	0.1	14 02:54 AM	0.1
08:52 AM	5.1	14 08:52 AM	5.1
03:06 PM	0.3	14 03:06 PM	0.3
08:54 PM	5.2	14 08:54 PM	5.2
4 03:32 AM	0.0	15 03:32 AM	0.0
09:24 AM	5.2	15 09:24 AM	5.2
03:48 PM	0.2	15 03:48 PM	0.2
09:26 PM	5.2	15 09:26 PM	5.2
5 04:08 AM	0.0	16 04:08 AM	0.0
09:57 AM	5.3	16 09:57 AM	5.3
04:29 PM	0.2	16 04:29 PM	0.2
10:01 PM	5.1	16 10:01 PM	5.1
6 04:43 AM	0.0	17 04:43 AM	0.0
10:33 AM	5.0	17 10:33 AM	5.0
05:10 PM	0.0	17 05:10 PM	0.0
10:43 PM	4.9	17 10:43 PM	4.9
7 05:18 AM	0.0	18 05:18 AM	0.0
11:16 AM	5.0	18 11:16 AM	5.0
05:50 PM	0.0	18 05:50 PM	0.0
11:24 PM	4.9	18 11:24 PM	4.9
8 05:43 AM	0.0	19 05:43 AM	0.0
11:33 AM	5.0	19 11:33 AM	5.0
06:10 PM	0.0	19 06:10 PM	0.0
11:33 PM	4.9	19 11:33 PM	4.9
9 05:57 AM	0.0	20 05:57 AM	0.0
11:41 AM	5.0	20 11:41 AM	5.0
06:18 PM	0.0	20 06:18 PM	0.0
11:39 PM	4.9	20 11:39 PM	4.9
10 06:11 AM	0.0	21 06:11 AM	0.0
11:49 AM	5.0	21 11:49 AM	5.0
06:26 PM	0.0	21 06:26 PM	0.0
11:36 PM	4.9	21 11:36 PM	4.9
11 06:24 AM	0.0	22 06:24 AM	0.0
11:57 AM	5.0	22 11:57 AM	5.0
06:33 PM	0.0	22 06:33 PM	0.0
11:24 PM	4.9	22 11:24 PM	4.9
12 06:36 AM	0.0	23 06:36 AM	0.0
12:03 AM	5.0	23 12:03 AM	5.0
06:39 PM	0.0	23 06:39 PM	0.0
11:11 PM	4.9	23 11:11 PM	4.9
1 06:41 AM	0.0	24 06:41 AM	0.0
12:11 AM	5.0	24 12:11 AM	5.0
06:43 PM	0.0	24 06:43 PM	0.0
11:00 PM	4.9	24 11:00 PM	4.9
2 06:43 AM	0.0	25 06:43 AM	0.0
12:11 AM	5.0	25 12:11 AM	5.0
06:43 PM	0.0	25 06:43 PM	0.0
10:58 PM	4.9	25 10:58 PM	4.9
3 06:43 AM	0.0	26 06:43 AM	0.0
12:11 AM	5.0	26 12:11 AM	5.0
06:43 PM	0.0	26 06:43 PM	0.0
10:54 PM	4.9	26 10:54 PM	4.9
4 06:43 AM	0.0	27 06:43 AM	0.0
12:11 AM	5.0	27 12:11 AM	5.0
06:43 PM	0.0	27 06:43 PM	0.0
10:50 PM	4.9	27 10:50 PM	4.9
5 06:43 AM	0.0	28 06:43 AM	0.0
12:11 AM	5.0	28 12:11 AM	5.0
06:43 PM	0.0	28 06:43 PM	0.0
10:46 PM	4.9	28 10:46 PM	4.9
6 06:43 AM	0.0	29 06:43 AM	0.0
12:11 AM	5.0	29 12:11 AM	5.0
06:43 PM	0.0	29 06:43 PM	0.0
10:42 PM	4.9	29 10:42 PM	4.9
7 06:43 AM	0.0	30 06:43 AM	0.0
12:11 AM	5.0	30 12:11 AM	5.0
06:43 PM	0.0	30 06:43 PM	0.0
10:38 PM	4.9	30 10:38 PM	4.9



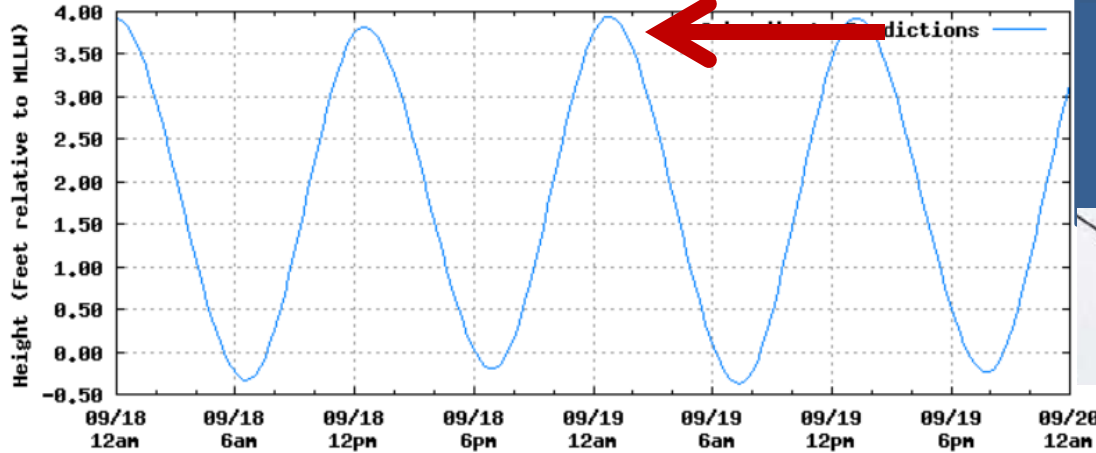
So now you know a lot about the tides,  
but **are the tide tables** from the **Battery** at New York  
harbor **accurate for other places** along the river?

**Why or why not?**

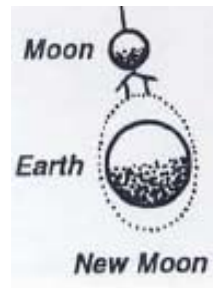
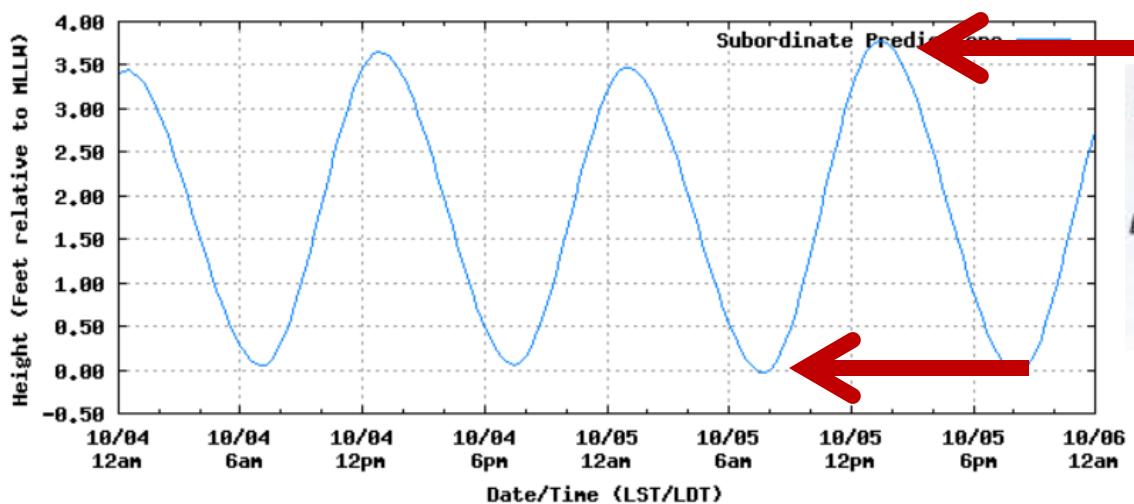
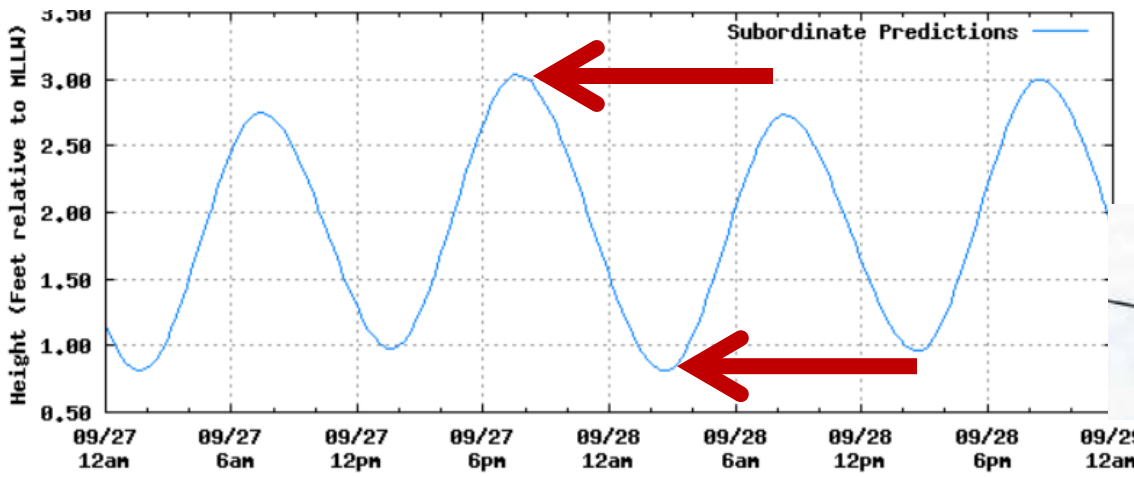




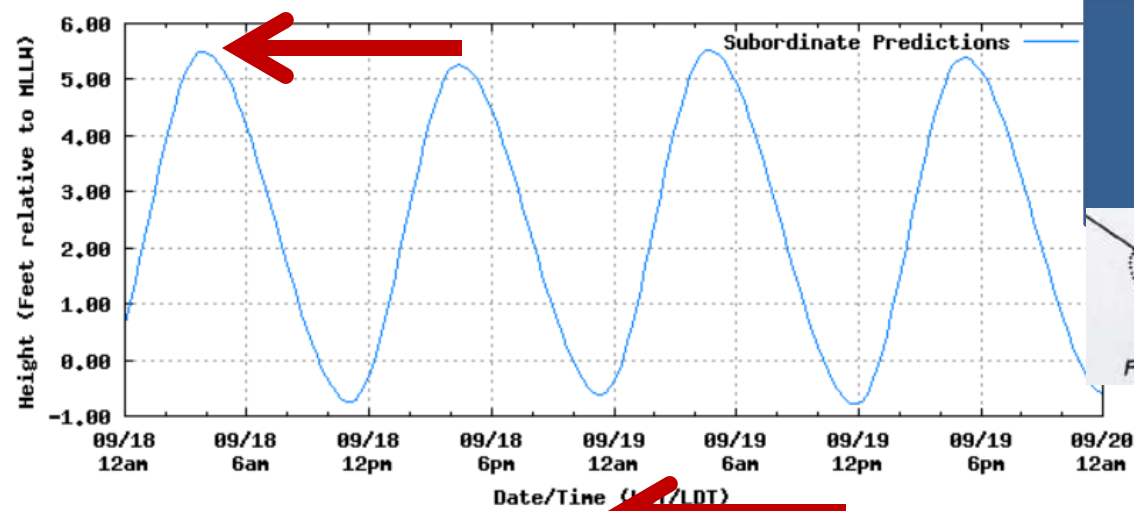
# Poughkeepsie, NY



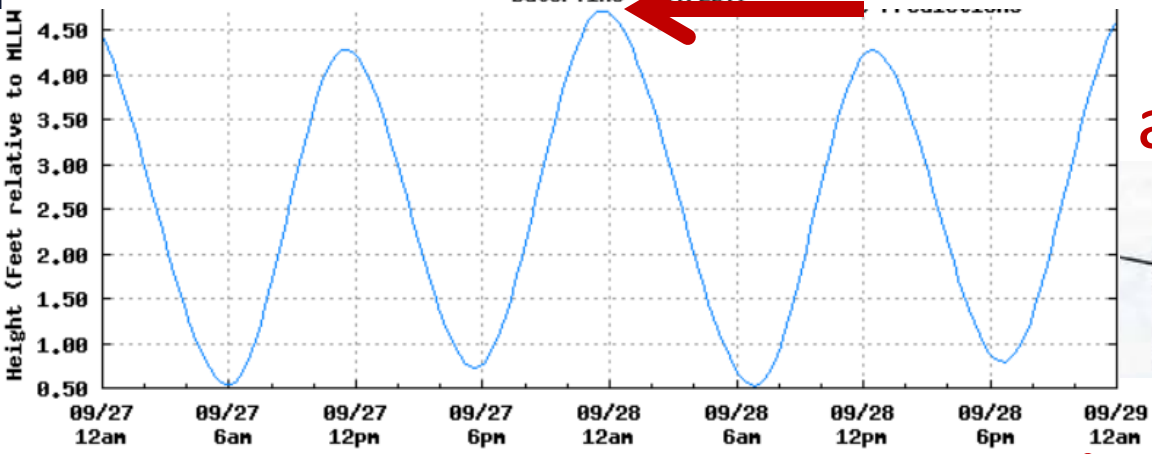
High tides here reach only 4 feet in height.



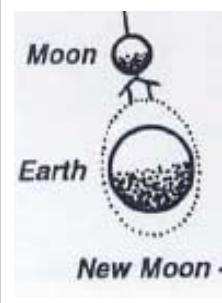
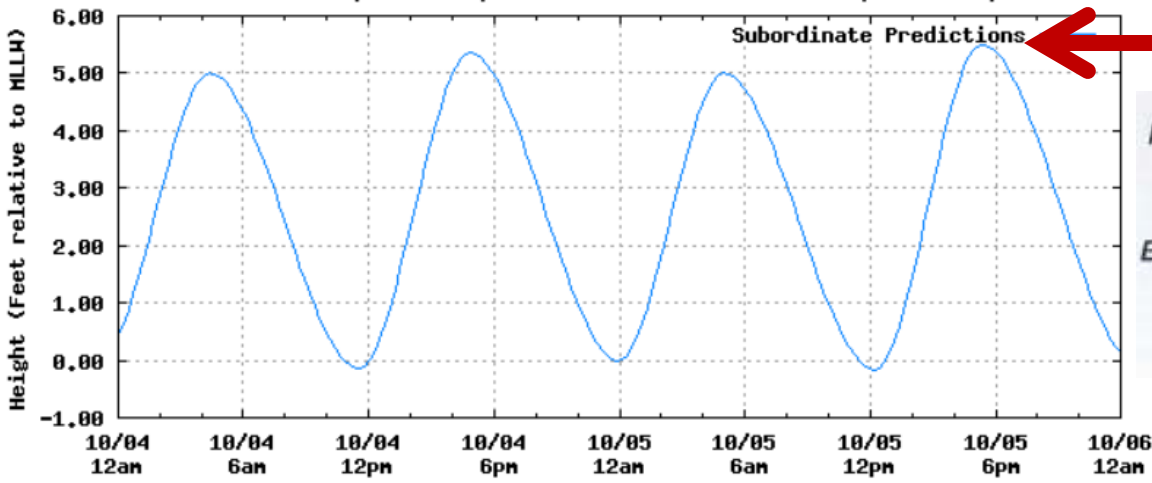
# Troy, NY



Full Moon - Spring Tides

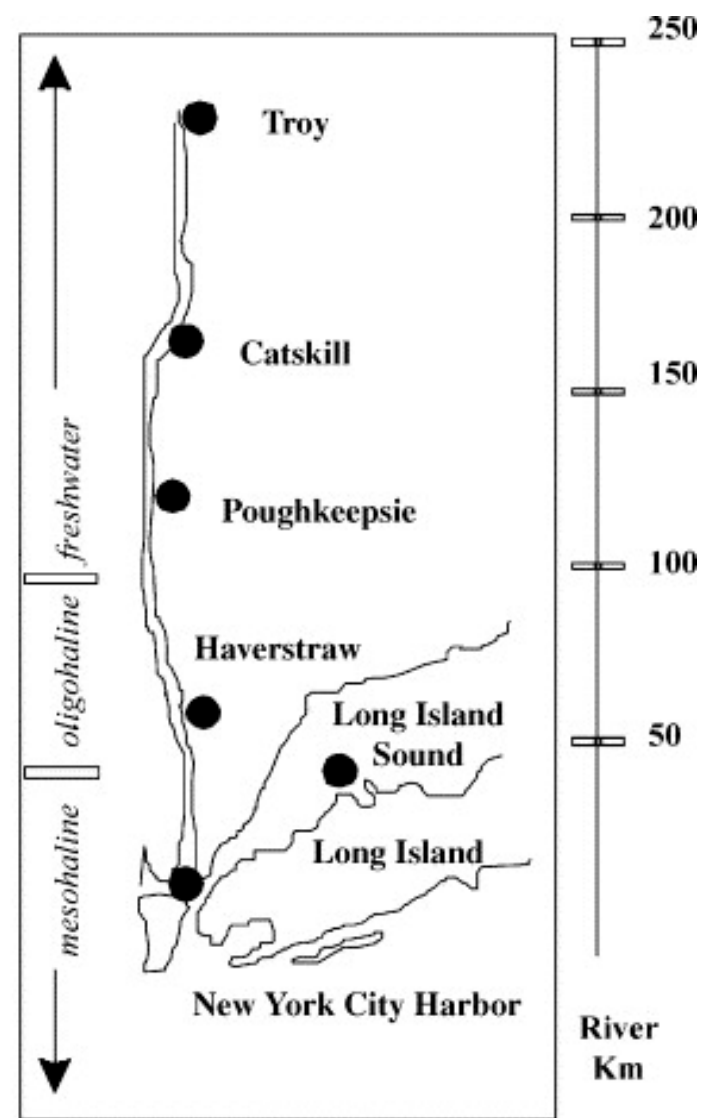
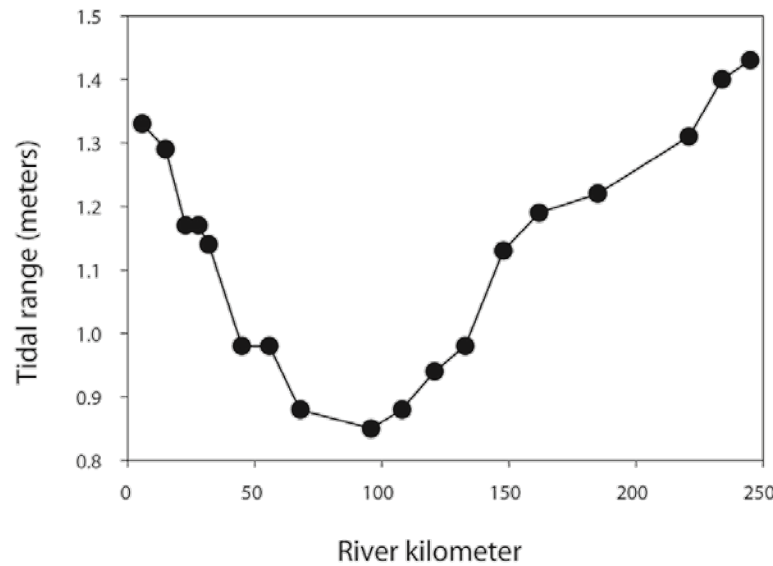
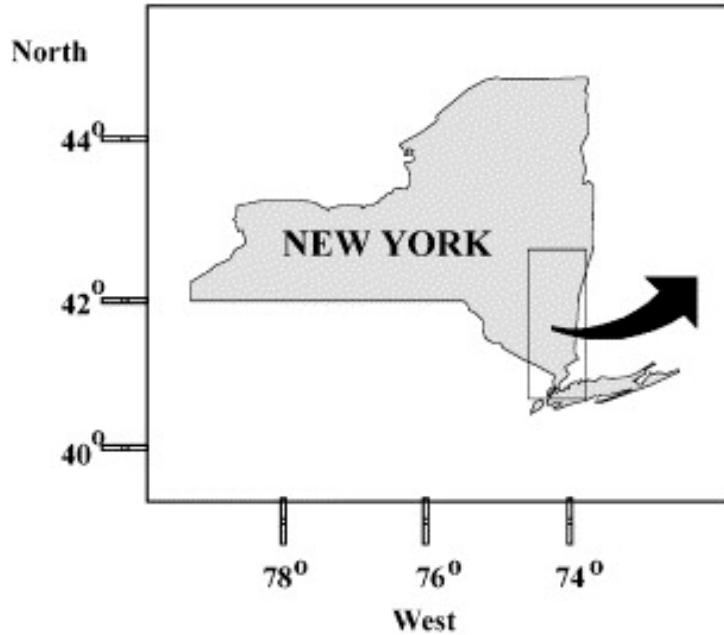


Last Quarter - Neap Tides



New Moon

High tides here reach almost **6 feet** in height.

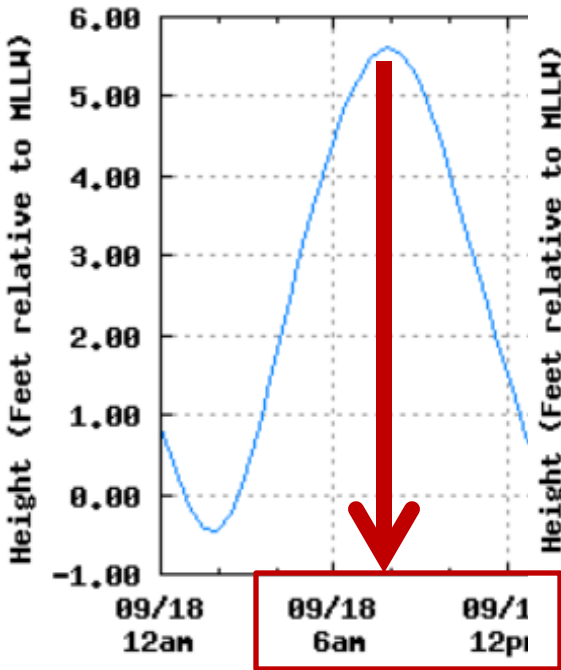


Tidal height varies along the river!

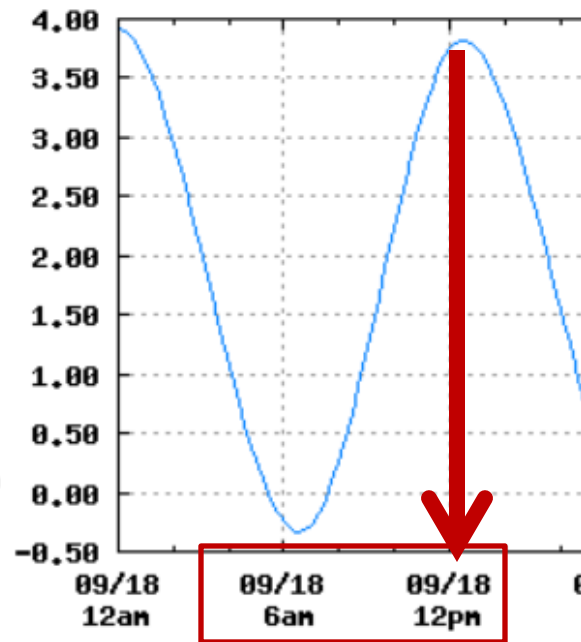
Figure from D.L. Strayer's *The Hudson River Primer*



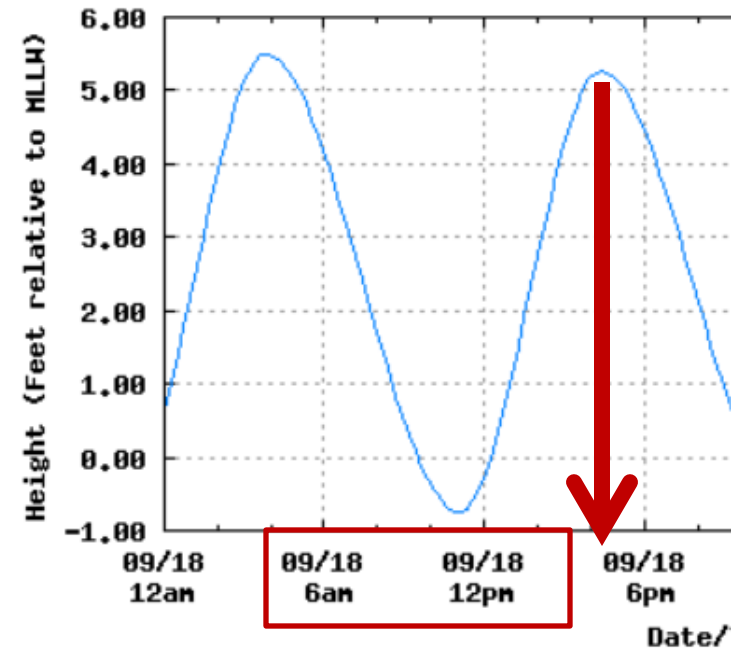
# NYC- Battery



# Poughkeepsie



# Troy



It takes a little over **9 hours** for a tide to reach Troy.

In addition to **combating the current** from the normal **downstream flow** of the river, the incoming tide also **pushes against the outgoing tidal current**.