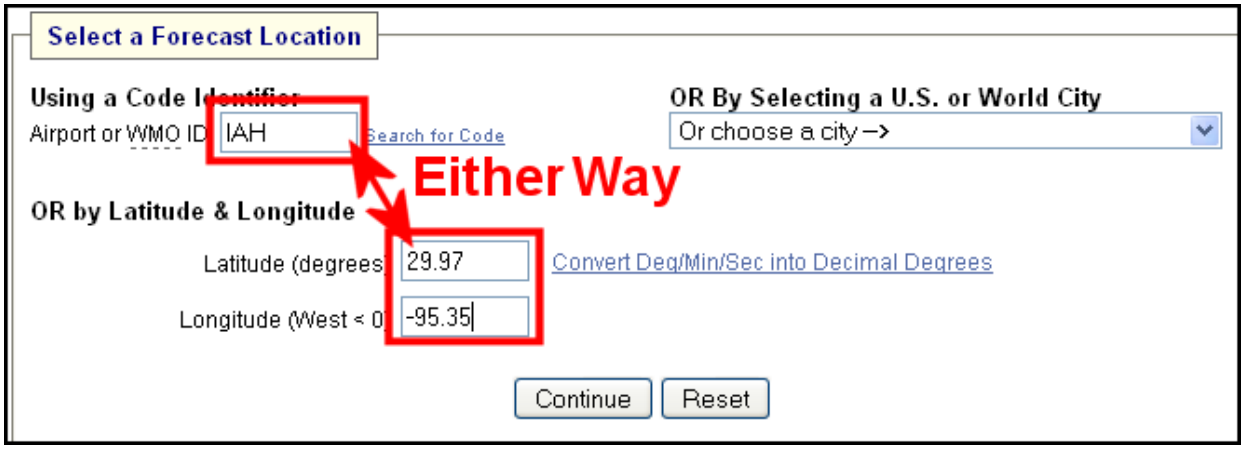
Making Meteograms With Excel

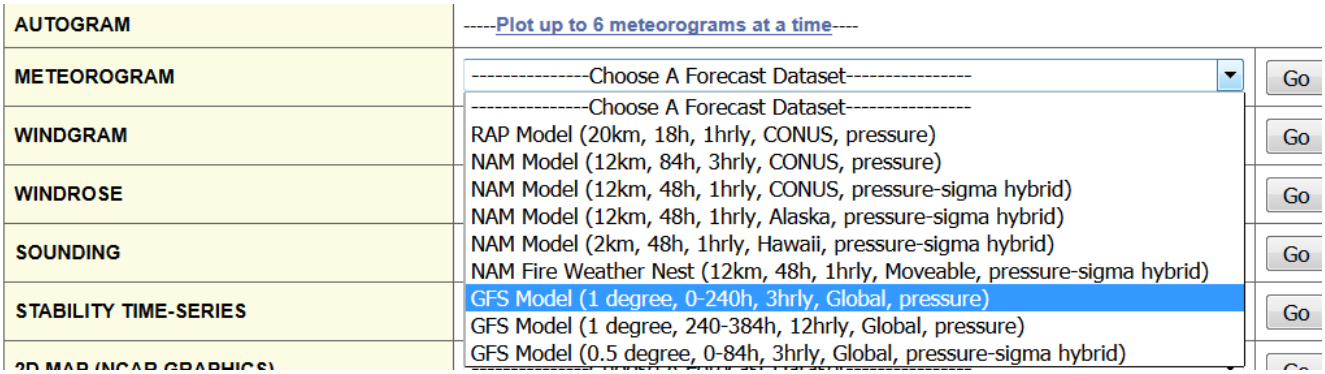
Get Raw Data:

Go to the ARL website: http://ready.arl.noaa.gov/READYcmet.php

1. Type in an airport identifier **or** the latitude/longitude of the place you want to generate the meteogram for. (use negative value for longitude in the U.S.). Click "**Continue**"

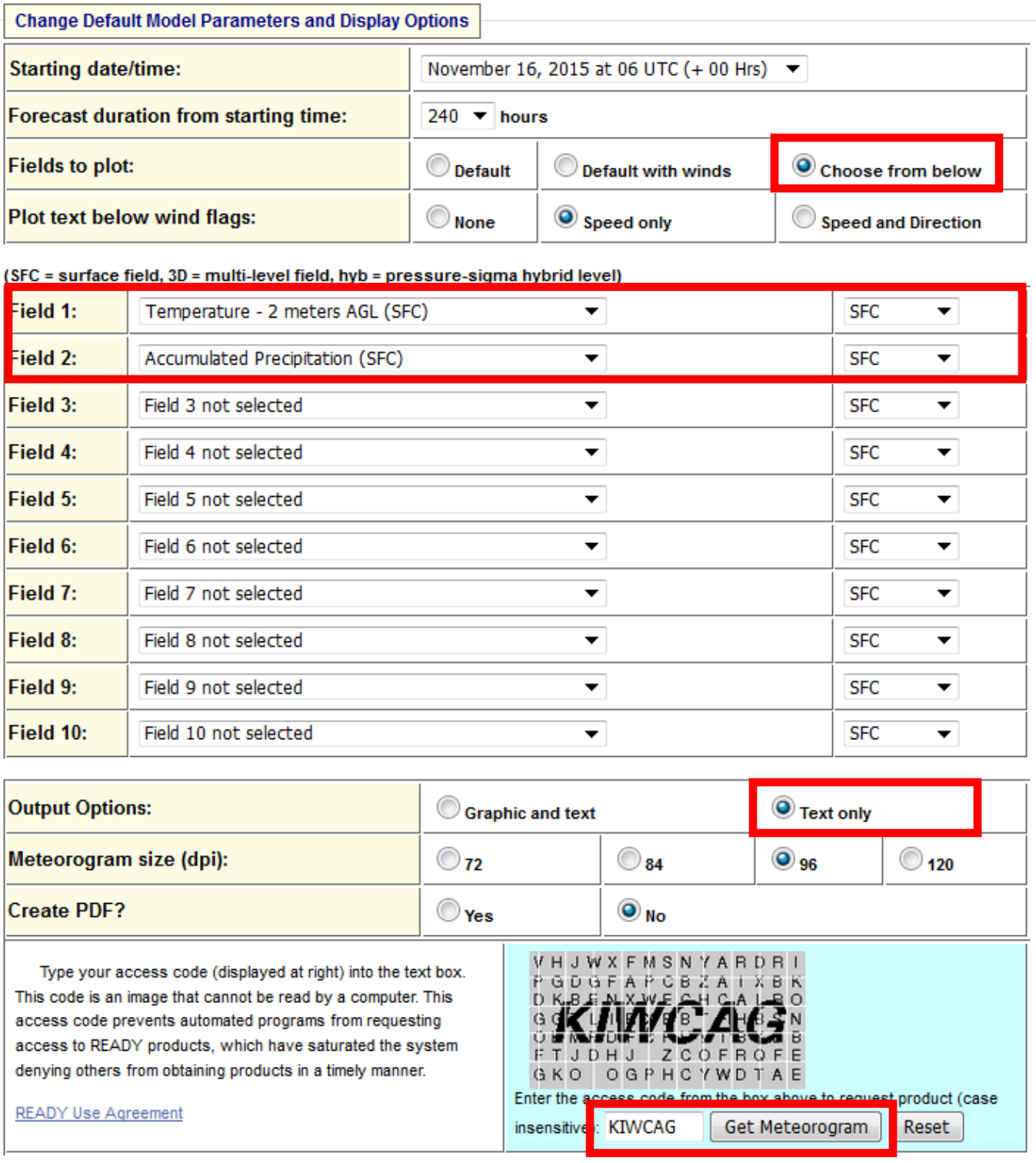


2. On this page, you choose your model. On the "**METEOGRAM**" line click the drop-down menu next to the "**GO**" button to select the "**GFS Model (1 degree, 0-240h 3hrly Global, pressure)**". and click "**GO**"

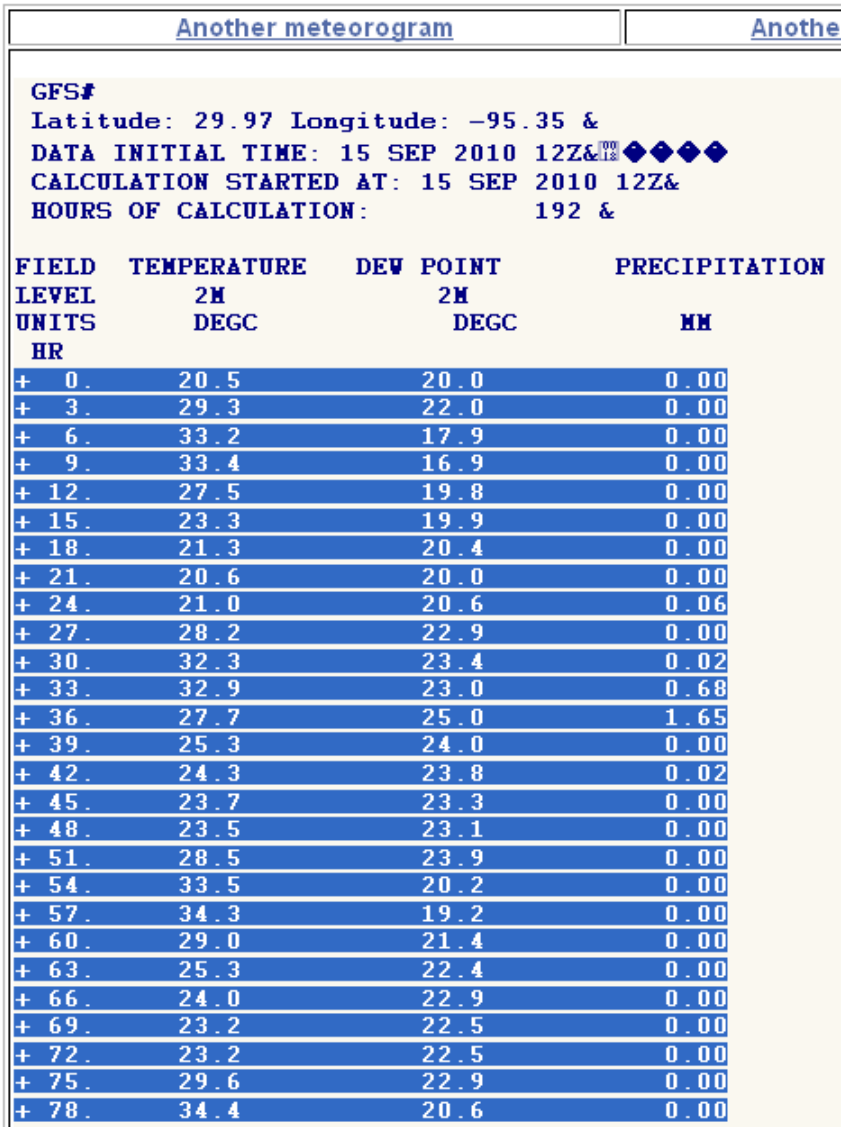


3. On this page, the current/latest model run is selected by default. If that's ok, click "**Next**". if not, select an earlier model run with the drop-down menu.

4. Now you're on a page that requires editing of a number of fields. In the top box next to "**Fields to plot:**", click the radio button that says "**Choose From Below**". In the "**Field 1**" box, select "**Temperature - 2 meters AGL (SFC)**". In "**Field 2:**" select "**Accumulated Precip (SFC)**". In "**Output Options**:", choose "**Text only**". Type in the series of letters at the bottom and click "**Get Meteogram**".



5. The text now loads within a frame of the next web page. The text that you will want to paste into Excel is highlighted in blue below (example only shows text down to 78hrs).



Another meteorogram | Anothe

```
 GFS#
 Latitude: 29.97 Longitude: -95.35 &
 DATA INITIAL TIME: 15 SEP 2010 12Z&♦♦♦♦
 CALCULATION STARTED AT: 15 SEP 2010 12Z&
 HOURS OF CALCULATION:          192 &

FIELD  TEMPERATURE   DEW POINT       PRECIPITATION
LEVEL      2M            2M
UNITS      DEGC          DEGC            MM
 HR
+  0.      20.5          20.0            0.00
+  3.      29.3          22.0            0.00
+  6.      33.2          17.9            0.00
+  9.      33.4          16.9            0.00
+ 12.      27.5          19.8            0.00
+ 15.      23.3          19.9            0.00
+ 18.      21.3          20.4            0.00
+ 21.      20.6          20.0            0.00
+ 24.      21.0          20.6            0.06
+ 27.      28.2          22.9            0.00
+ 30.      32.3          23.4            0.02
+ 33.      32.9          23.0            0.68
+ 36.      27.7          25.0            1.65
+ 39.      25.3          24.0            0.00
+ 42.      24.3          23.8            0.02
+ 45.      23.7          23.3            0.00
+ 48.      23.5          23.1            0.00
+ 51.      28.5          23.9            0.00
+ 54.      33.5          20.2            0.00
+ 57.      34.3          19.2            0.00
+ 60.      29.0          21.4            0.00
+ 63.      25.3          22.4            0.00
+ 66.      24.0          22.9            0.00
+ 69.      23.2          22.5            0.00
+ 72.      23.2          22.5            0.00
+ 75.      29.6          22.9            0.00
+ 78.      34.4          20.6            0.00
```

Making Graphics With Excel:

1. Open Microsoft Excel and open the GFS meteogram file you want to plot:

   http://home.comcast.net/~cgh57/meteograms/GFS.xlsx (0-192hrs)

   http://home.comcast.net/~cgh57/meteograms/GFS_Extended.xlsx (192-384hrs)

2. Back to the text file. Highlight all 4 columns starting with your cursor just left of the "**+**" sign next to the 0 hour and drag your mouse to the bottom. You should ONLY have highlighted the numbers, NOT the column headers. Right-click on the highlighted area and select "**Copy**".

FIELD LEVEL UNITS HR	TEMPERATURE 2M DEGC	DEW POINT 2M DEGC	PRECIPITATION MM
+ 0.	27.8	23.3	0.00
+ 3.	26.5	23.4	0.00
+ 6.	25.3	23.0	0.00
+ 9.	32.9	22.7	0.00
+ 12.	41.3	21.1	0.00
+ 15.	39.6	19.5	0.00
+ 18.	33.5	21.7	0.00
+ 21.	28.2	22.7	0.00
+ 24.	26.9	22.8	0.00
+ 27.	26.1	23.3	0.00
+ 30.	25.1	23.5	0.00
+ 33.	32.5	23.7	0.00
+ 36.	37.4	21.8	0.05
+ 39.	36.5	21.2	0.01
+ 42.	33.7	22.6	0.00
+ 45.	28.9	22.9	0.00
+ 48.	27.0	23.2	0.00

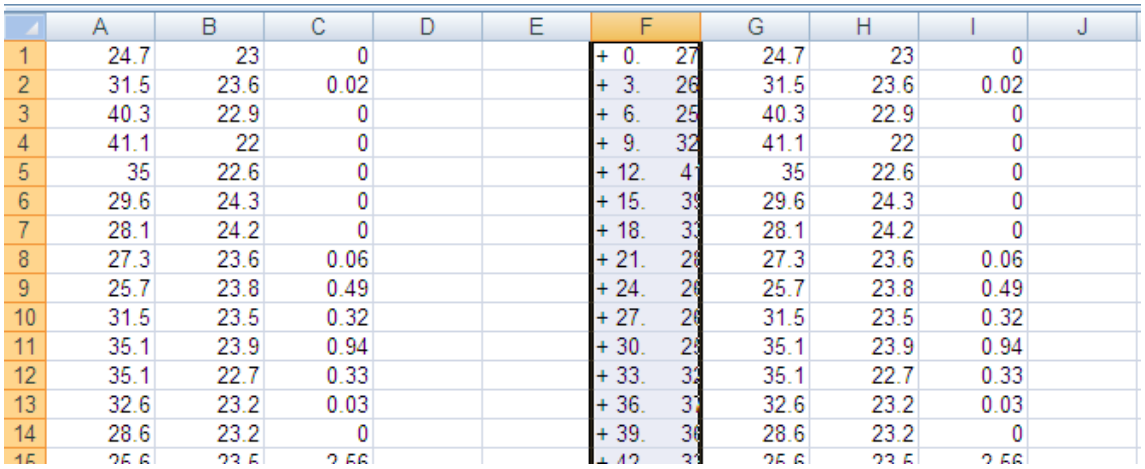
Highlight all fields from hour 0 to 240

3. Go the spreadsheet and click the "**Raw**" tab on the bottom (to paste in the raw data you just copied). Left click in the cell "**F1**". There should be a zero in that box. Now right-click and select "**Paste**".

	A	B	C	D	E	F	G	H	I	J
1	24.7	23	0			0	24.7	23	0	
2	31.5	23.6	0.02			3	31.5	23.6	0.02	
3	40.3	22.9	0			6	40.3	22.9	0	
4	41.1	22	0			9	41.1	22	0	
5	35	22.6	0			12	35	22.6	0	
6	29.6	24.3	0			15	29.6	24.3	0	
7	28.1	24.2	0			18	28.1	24.2	0	
8	27.3	23.6	0.06			21	27.3	23.6	0.06	
9	25.7	23.8	0.49			24	25.7	23.8	0.49	
10	31.5	23.5	0.32			27	31.5	23.5	0.32	
11	35.1	23.9	0.94			30	35.1	23.9	0.94	
12	35.1	22.7	0.33			33	35.1	22.7	0.33	
13	32.6	23.2	0.03			36	32.6	23.2	0.03	
14	28.6	23.2	0			39	28.6	23.2	0	

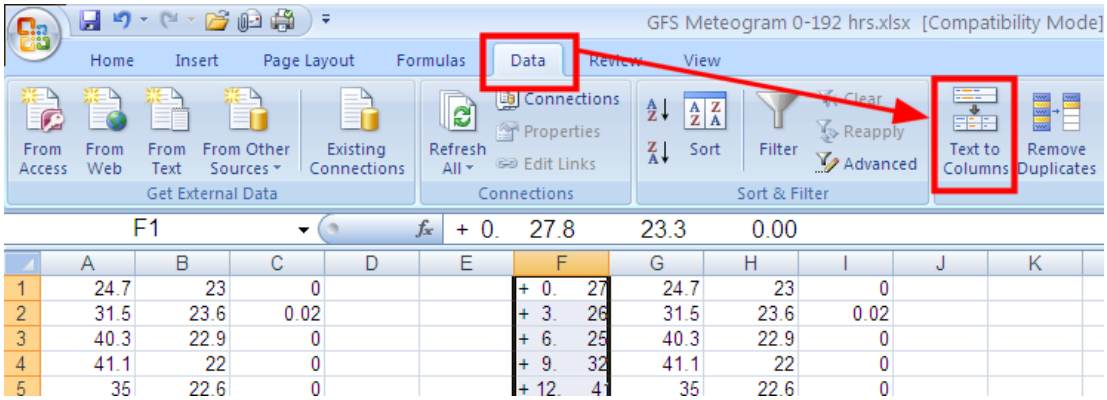
Paste raw data here

4. The spreadsheet column “**F**” will now look like the image below:



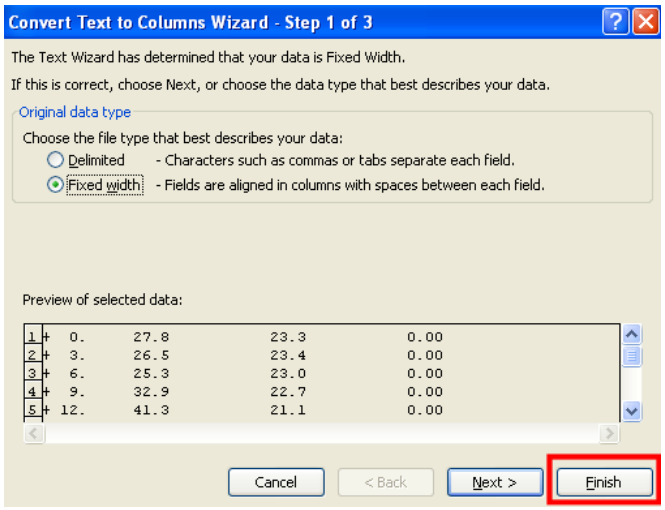
	A	B	C	D	E	F	G	H	I	J
1	24.7	23	0			+ 0. 27	24.7	23	0	
2	31.5	23.6	0.02			+ 3. 26	31.5	23.6	0.02	
3	40.3	22.9	0			+ 6. 25	40.3	22.9	0	
4	41.1	22	0			+ 9. 32	41.1	22	0	
5	35	22.6	0			+ 12. 41	35	22.6	0	
6	29.6	24.3	0			+ 15. 39	29.6	24.3	0	
7	28.1	24.2	0			+ 18. 33	28.1	24.2	0	
8	27.3	23.6	0.06			+ 21. 26	27.3	23.6	0.06	
9	25.7	23.8	0.49			+ 24. 26	25.7	23.8	0.49	
10	31.5	23.5	0.32			+ 27. 26	31.5	23.5	0.32	
11	35.1	23.9	0.94			+ 30. 28	35.1	23.9	0.94	
12	35.1	22.7	0.33			+ 33. 32	35.1	22.7	0.33	
13	32.6	23.2	0.03			+ 36. 31	32.6	23.2	0.03	
14	28.6	23.2	0			+ 39. 36	28.6	23.2	0	
15	25.6	23.5	2.56			+ 42 31	25.6	23.5	2.56	

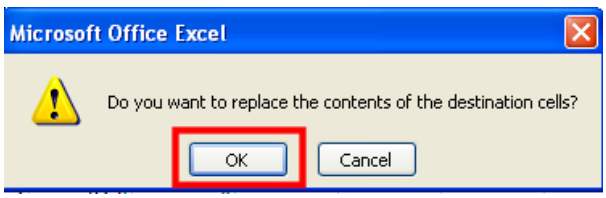
5. Now you need to sort the newly-pasted data into columns and replace the old data. At the top toolbar in Excel, click "**Data**" then select "**Text to Columns**" in the ribbon toolbar (Excel 2007).



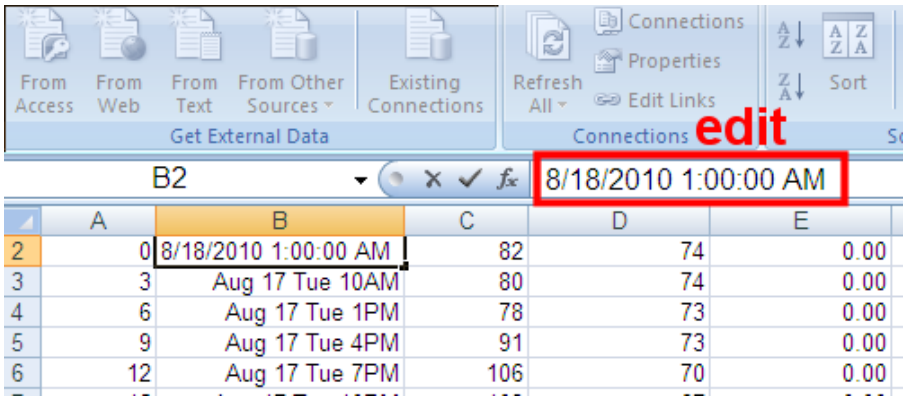
	A	B	C	D	E	F	G	H	I	J	K
1	24.7	23	0			+ 0. 27	24.7	23	0		
2	31.5	23.6	0.02			+ 3. 26	31.5	23.6	0.02		
3	40.3	22.9	0			+ 6. 25	40.3	22.9	0		
4	41.1	22	0			+ 9. 32	41.1	22	0		
5	35	22.6	0			+ 12. 41	35	22.6	0		

6. A box will open. Click "**Finish**" in the box that pops up and then "**OK**" to confirm that you want to replace the old data.



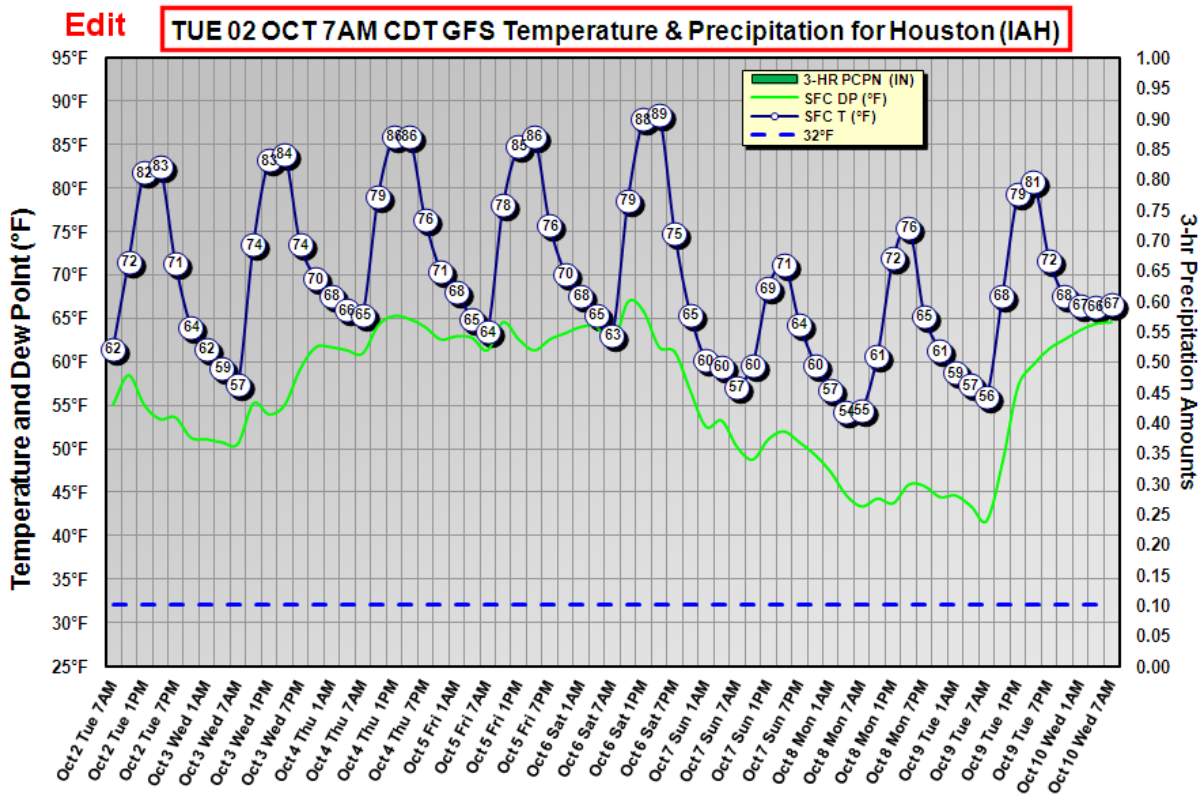


7. To make the date/time groups at the bottom of the graphic apply to the current model run that you just pasted in there, click the "**Converted Data**" tab at the bottom of your Excel document. Click the very top date/time group (**cell B2**) and edit it for the appropriate date and time.



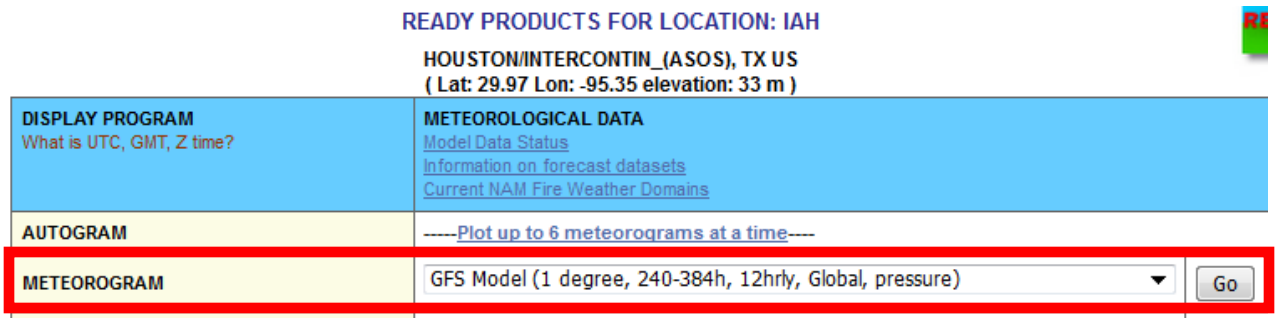
	A	B	C	D	E
2	0	8/18/2010 1:00:00 AM	82	74	0.00
3	3	Aug 17 Tue 10AM	80	74	0.00
4	6	Aug 17 Tue 1PM	78	73	0.00
5	9	Aug 17 Tue 4PM	91	73	0.00
6	12	Aug 17 Tue 7PM	106	70	0.00

8. Click the "**Temperature and Precip Graph**" tab at the bottom of the spreadsheet to view your meteogram. You can then click on the graph title at the top and change it to the correct date/time and location.

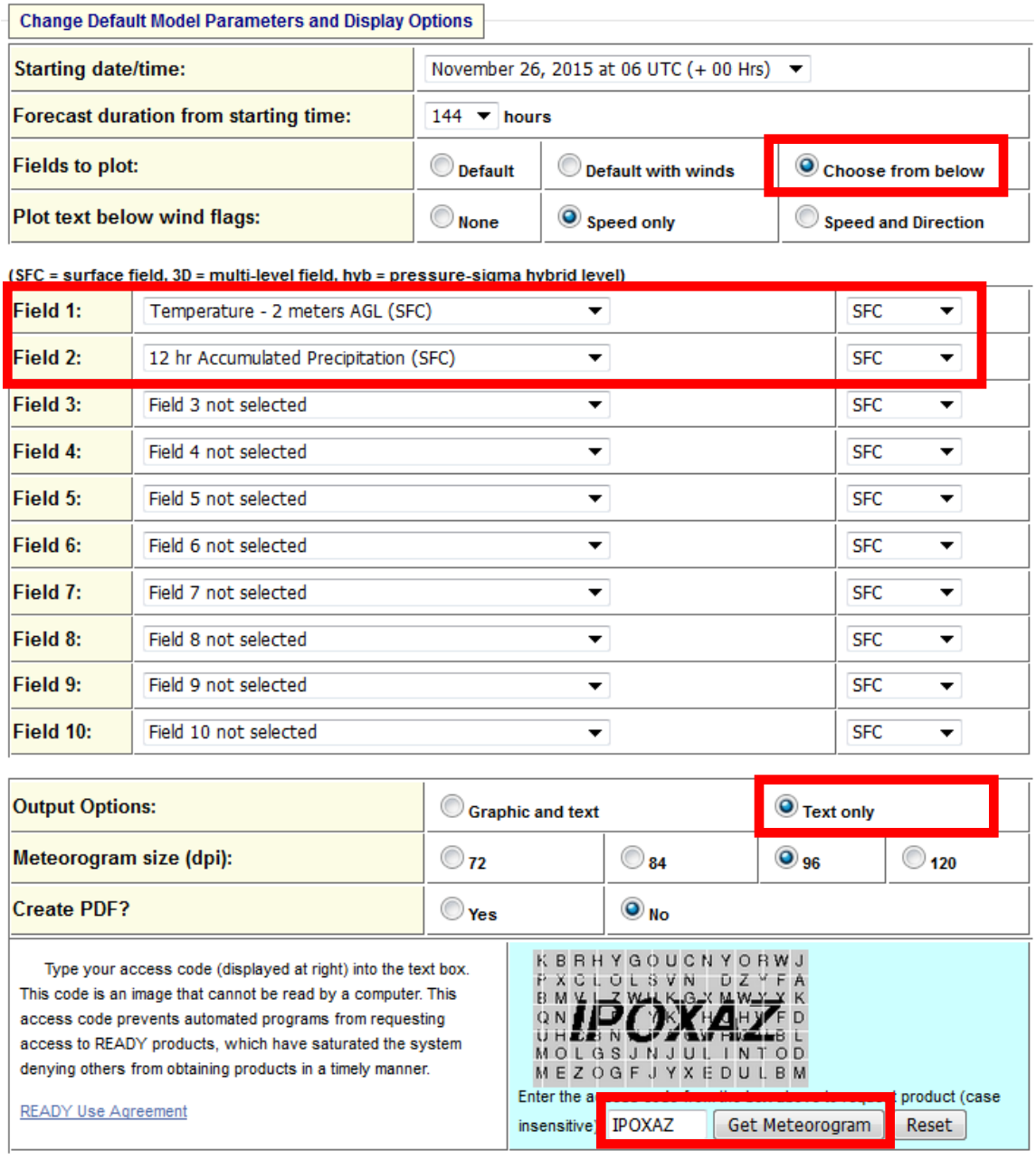


9. If necessary, right click either vertical axis labels and select "**Format Axis**" to change the start and end values or the interval between data labels. For winter plots, you don't need to have the left axis go all the way to 95F, for example, and you may want to drop the lower value to 20F (hopefully not, though!). For plots like the example above, maybe you don't want the

The same technique works for the **GFS_Extended.xlsx** data file. However, you need to select the dataset **"GFS Model (1 degree, 240-384h, 12hrly, Global pressure)"**, as indicated below:



In the data selection window that appears after selecting the current model run, select the "**12hr Accumulated Precipitation (SFC)**" instead of the 3hr precipitation you chose for the 0-192hr plot:



When the data are displayed, pay close attention to the line that says: **"CALCULATION STARTED AT:",** as this indicates the start date/time for your plot, which must be entered on the first tab of the spreadsheet ("**Converted Data**"). Failure to do this will mean that your times across the bottom of the graphic will be incorrect.

```
 GFS1r#
 Latitude: 29.97 Longitude: -95.35 &
 DATA INITIAL TIME: 16 NOV 2015 06Z&
 CALCULATION STARTED AT: 26 NOV 2015 06Z&
 HOURS OF CALCULATION:          144 &

FIELD   TEMPERATURE    DEW POINT        PRECIPITATION
LEVEL       2M             2M
UNITS       DEGC           DEGC             MM
 HR
+  0.       10.8            8.9             0.04
+ 12.       15.3           12.6             0.69
+ 24.       15.7           14.2             0.38
+ 36.       18.3           17.0             4.85
+ 48.       18.3           17.8             0.00
+ 60.       23.7           19.5             0.05
+ 72.       19.2           18.8             1.93
+ 84.       25.1           20.6             5.84
+ 96.       12.4           10.9            12.95
+108.       13.6            8.6             0.12
+120.        7.4            3.8             0.00
+132.        8.7            2.1             0.00
+144.        6.3            2.5             0.00
```

Start Time

Copy This

Open the spreadsheet "**GFS Extended.xlsx**". On the "**Raw Data**" tab at the bottom, paste in the copied data into cell F1. Click "**Data**" and "**Text to Columns**" as you did with the 0-240hr data.

	A	B	C	D	E	F	G	H	I
1	20	19.5	0			0	20	19.5	0
2	22.3	20.3	1.63			12	22.3	20.3	1.63
3	20.8	19.4	18.01			24	20.8	19.4	18.01
4	18.2	14.7	11.03			36	18.2	14.7	11.03
5	8.5	3.5	0			48	8.5	3.5	0
6	9.5	2.7	0			60	9.5	2.7	0
7	4.4	-1.8	0			72	4.4	-1.8	0
8	10.2	1.9	0			84	10.2	1.9	0
9	4.8	-1.8	0			96	4.8	-1.8	0
10	10.1	-0.2	0			108	10.1	-0.2	0
11	7.3	0.8	0			120	7.3	0.8	0
12	12.4	5.9	0			132	12.4	5.9	0
13	5	2.7	3.85			144	5	2.7	3.85

Click here and paste

Go to the "**Converted Data**" tab and convert the UTC time to your time zone. In the example above, the start time is 26 NOV 2015 06Z, which = 12am CST Nov. 26th. Change the date and time on the "**Converted Data**" tab to that.

Go to the graphic tab and adjust the header and left & right axis to contain the data properly.