Dungeon Craft Tutorial: Logic Block - How to calculate and view the phase of the moon

by manikus
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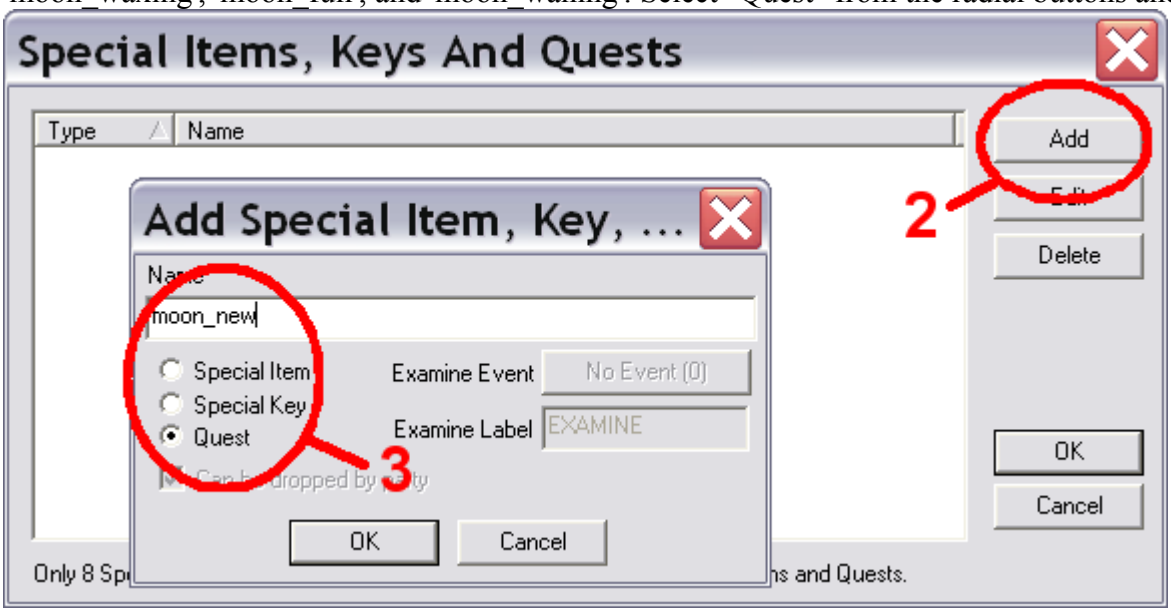
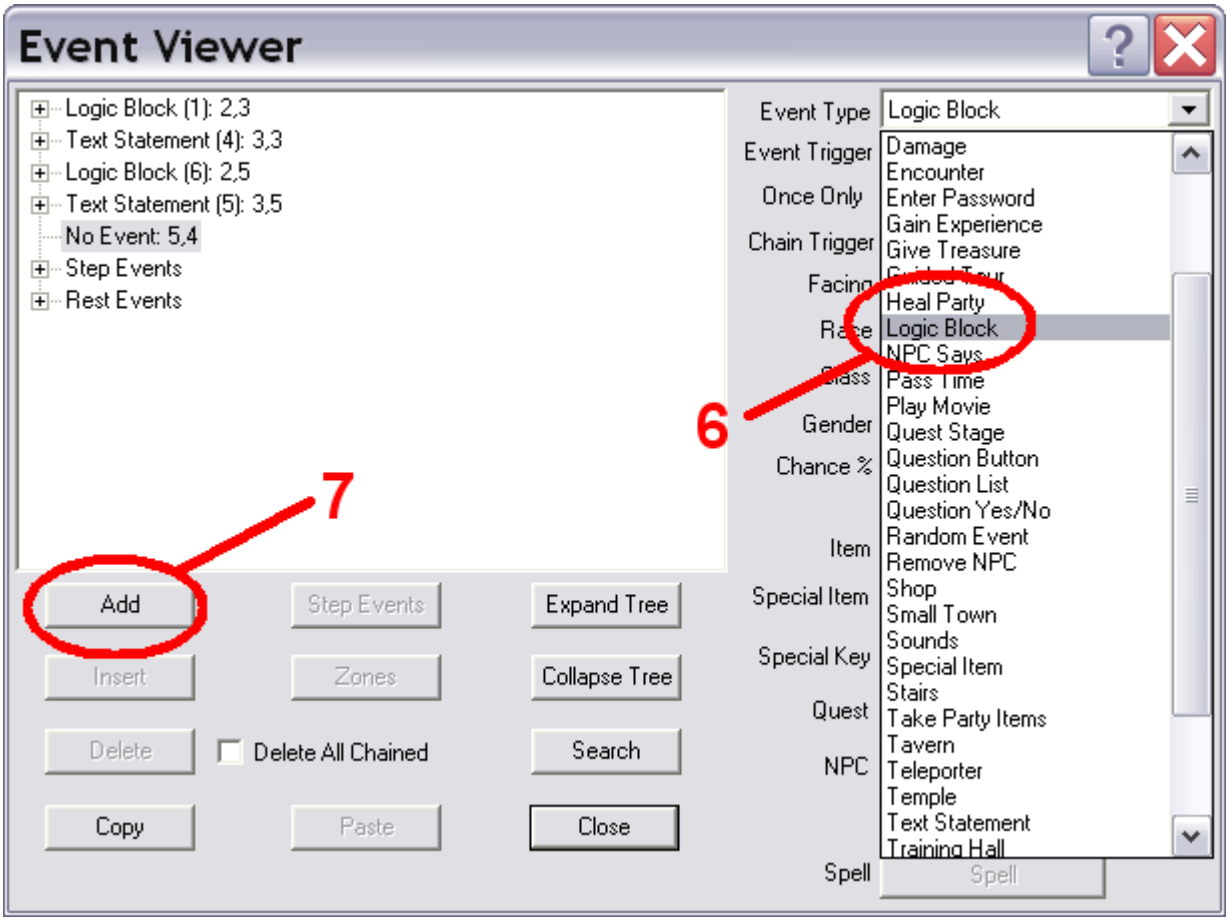
To use a Logic Block event to calculate and show the phases of the moon, you need to use the following steps.

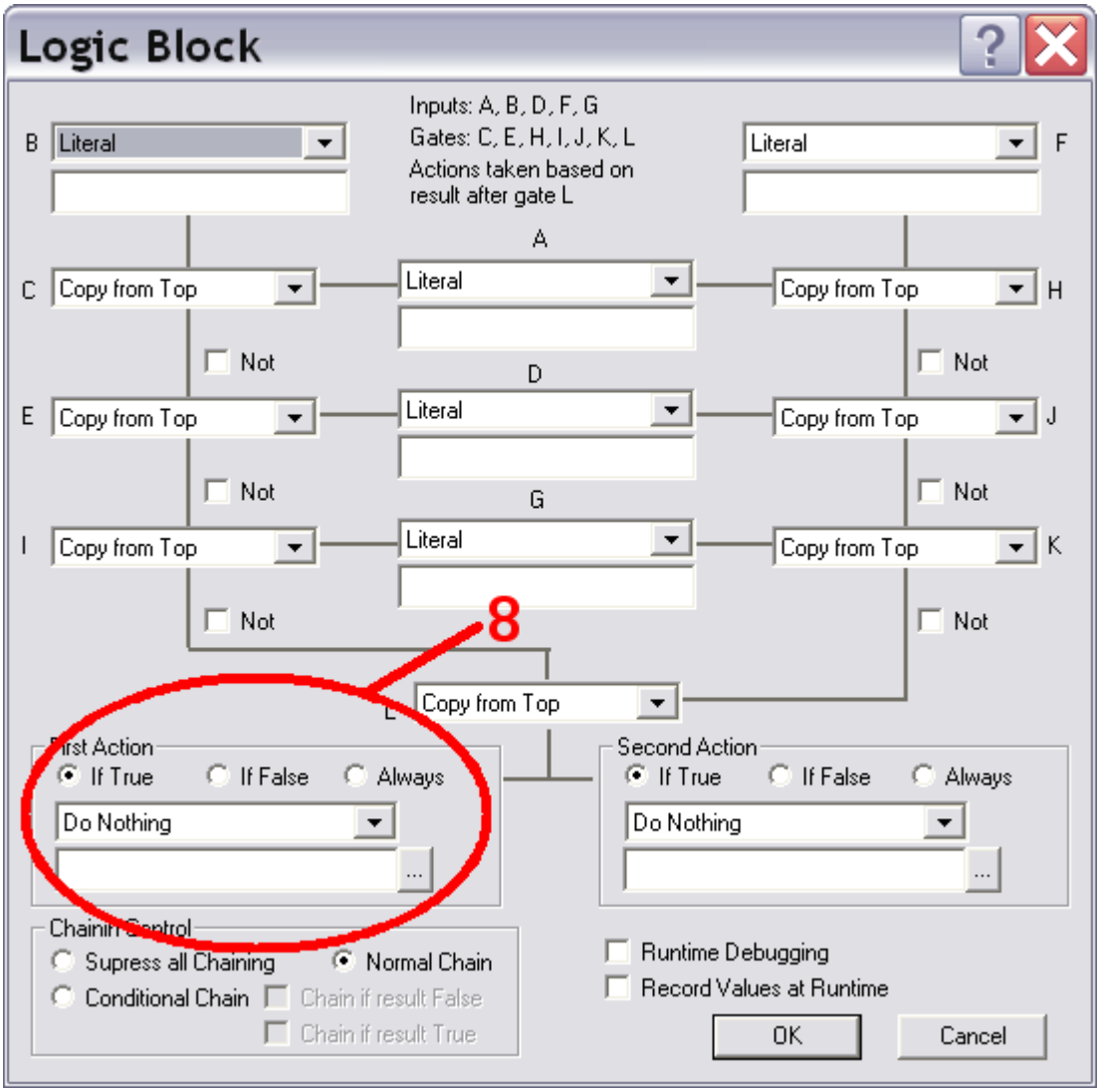
1. This tutorial will assume that we are tracking the phases of a moon that is much like our own, that completes its cycle in 28 days. This task will require 4 quests to track the phases of the moon and each will track the moon for one week, counting the full and new moons as phases, not just moments.
2. Open the Quest Editor (Global=>Items, Keys, Quests...) and click "Add".
3. In the new dialog box that pops up, enter a name for the quest, in this tutorial I will use 'moon_new', 'moon_waxing', 'moon_full', and 'moon_waning'. Select "Quest" from the radial buttons and then hit the "OK".



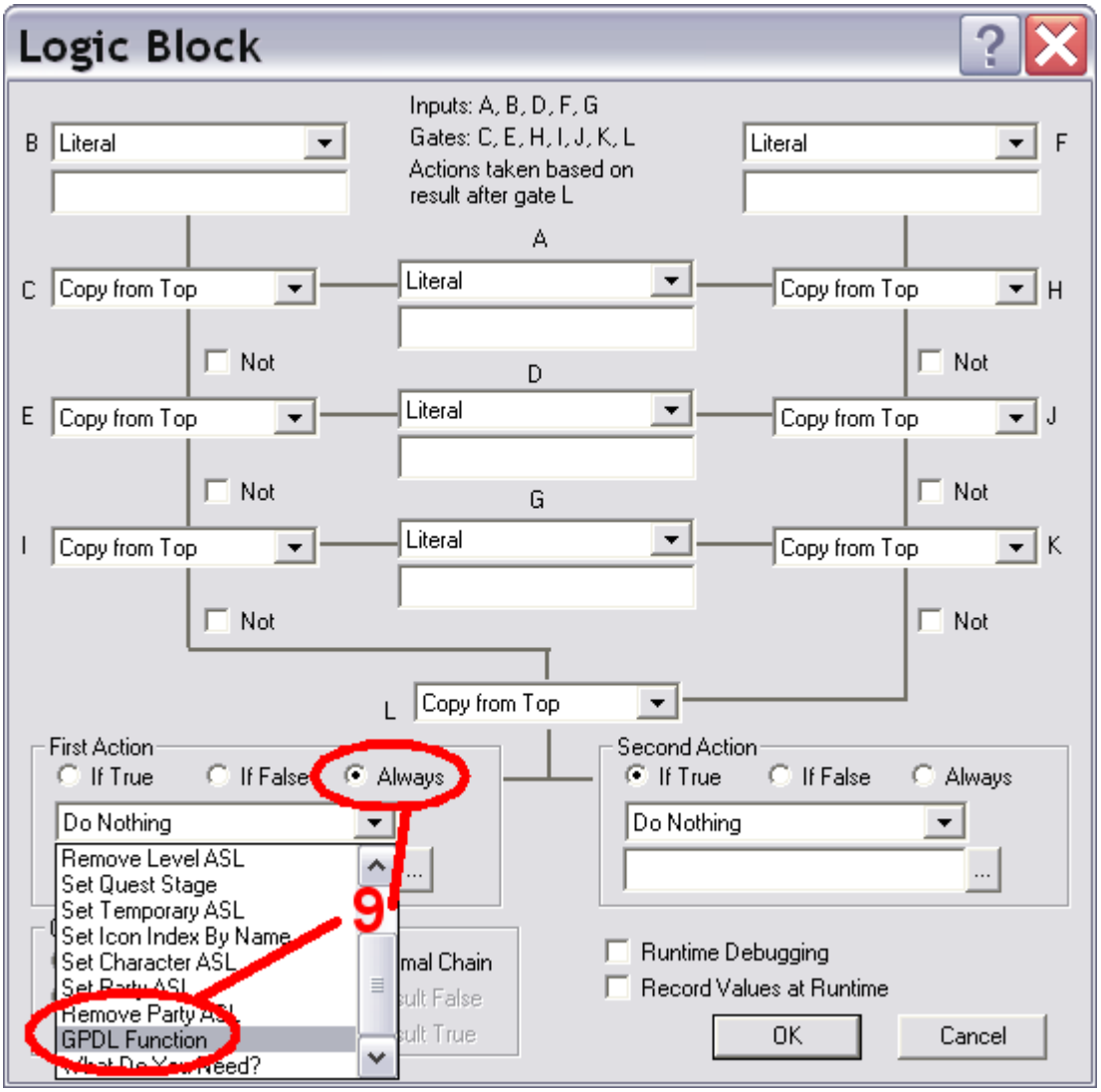
4. Repeat the salient part of step 2 and all of step 3 until you have created all 4 quests.
5. For this tutorial, we will create an observatory where the player can go to find out what phase the moon is in. If you wanted you could use appropriate pictures or tie it to a shop or combat, but I will use text in a Text Statement event. Choose a square on the map where you would like to place your Logic Block event and the Text Statement events that will represent the Observatory.
6. From the drop down box, choose "Logic Block" by first highlighting it and then clicking on it.
7. Click "Add".



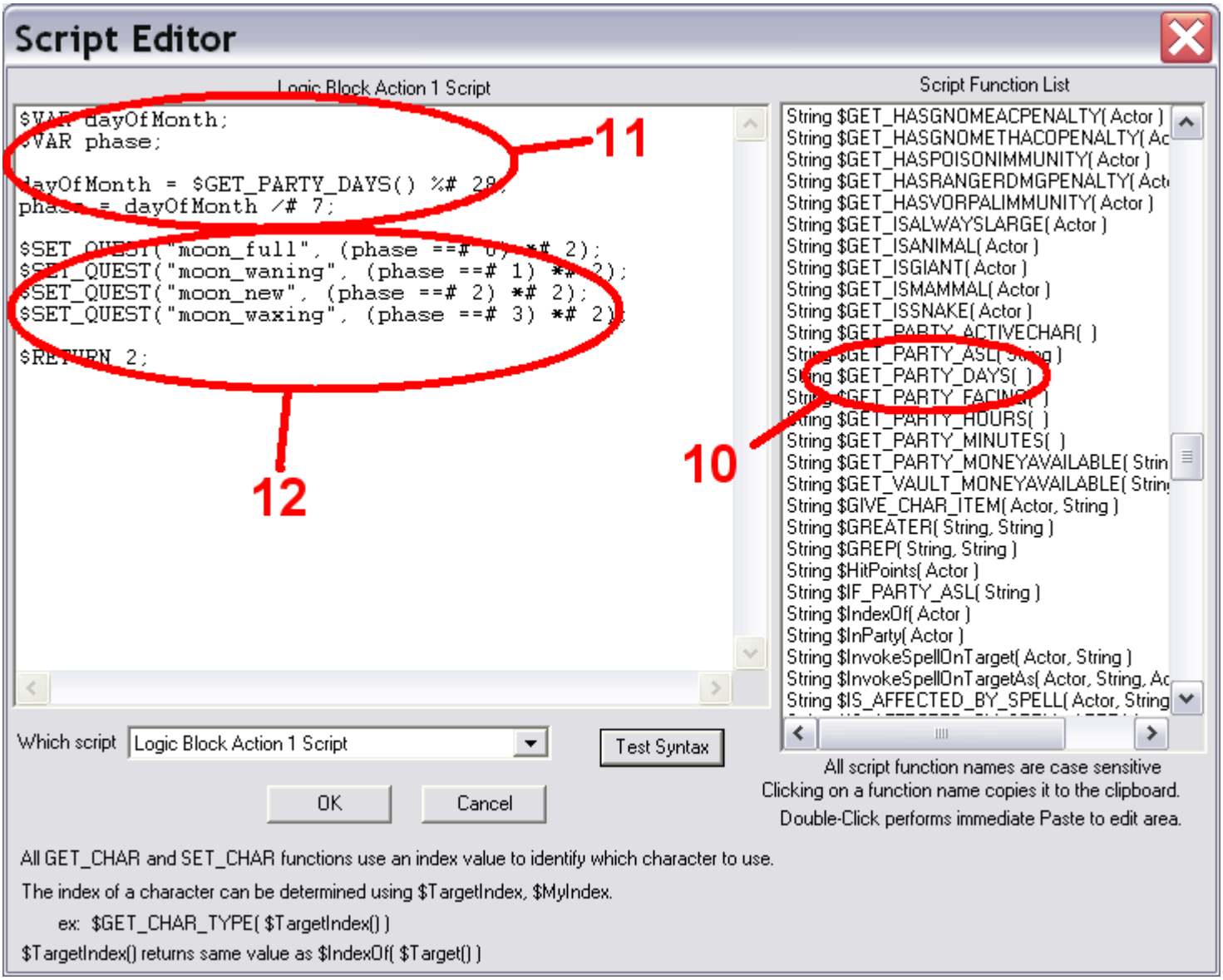
8. When the Logic Block event appears, it seems a bit overwhelming, but is easy to understand if you break it down into it's three parts. The seven boxes labeled C, E, I, H, J, K, and L are logic gates. The five boxes labeled, B, A, D, G, and F are input boxes. The two boxes at the bottom, labeled first action and second action, are the action boxes. For this use of the Logic Block, we are only interested in the "First Action" box.



9. To calculate the phase of the moon and store that information, we are going to need to use a GPDL function. First, since we are not using any other parts of the Logic Block event, choose "Always" from the radial buttons in the First Action box. In the "First Action" box, click on the drop down menu of events and scroll down to "GPDL Function" and select it. You will notice that the box remains blank, but to the right you sell a little button with an elipses - click on this to bring up the script editor.



10. In the Script Editor you will notice two panes, the blank one on the left is the work place where you will write your script, and the pane on the right contains all fo the suboperations in the GPDL language that are for use in events and the databases for Dungeon Craft. To use the prewritten snippets, simply scroll down to the one you want and double-click it for it to appear in the workplace on the left. For calculating and tracking the phase of the moon, I'll be using the $GET_PARTY_DAYS and $SET_QUEST snippets.
11. This is actually a moderately complicated script, though not difficult. However, I would never have been able to make this work without the guidance of Paul Stevens.
    The best way to go in writing this script is to use variables to store the numbers that represent the days of the lunar cycle and the calculated number for which phase it is in. The first 5 lines of the script tell DC that there are two variables and tells it what the two variables are equal to.
12. With the phase of the moon calculated, we need to now store it in a way that can be retieved by DC for later use, in this case at our Observatory. For this purpose, we will use the $SET_QUEST snippet which calls for 2 strings, the first being the name of the quest in quotation marks and the second being the number to store in the quest, which is either '0' or '2' depending upon the phase of the moon. We need to tell each of the 4 quests what value they should be holding at any given time. Finally, we need to include the $RETURN snippet which is followed by the value we are seeking, which is in this case a 2.
    It is very important that all lines of this script end with a ';' (semicolon).
    Click "OK" in the Script Editor and "OK" again, we're done with the hard part.



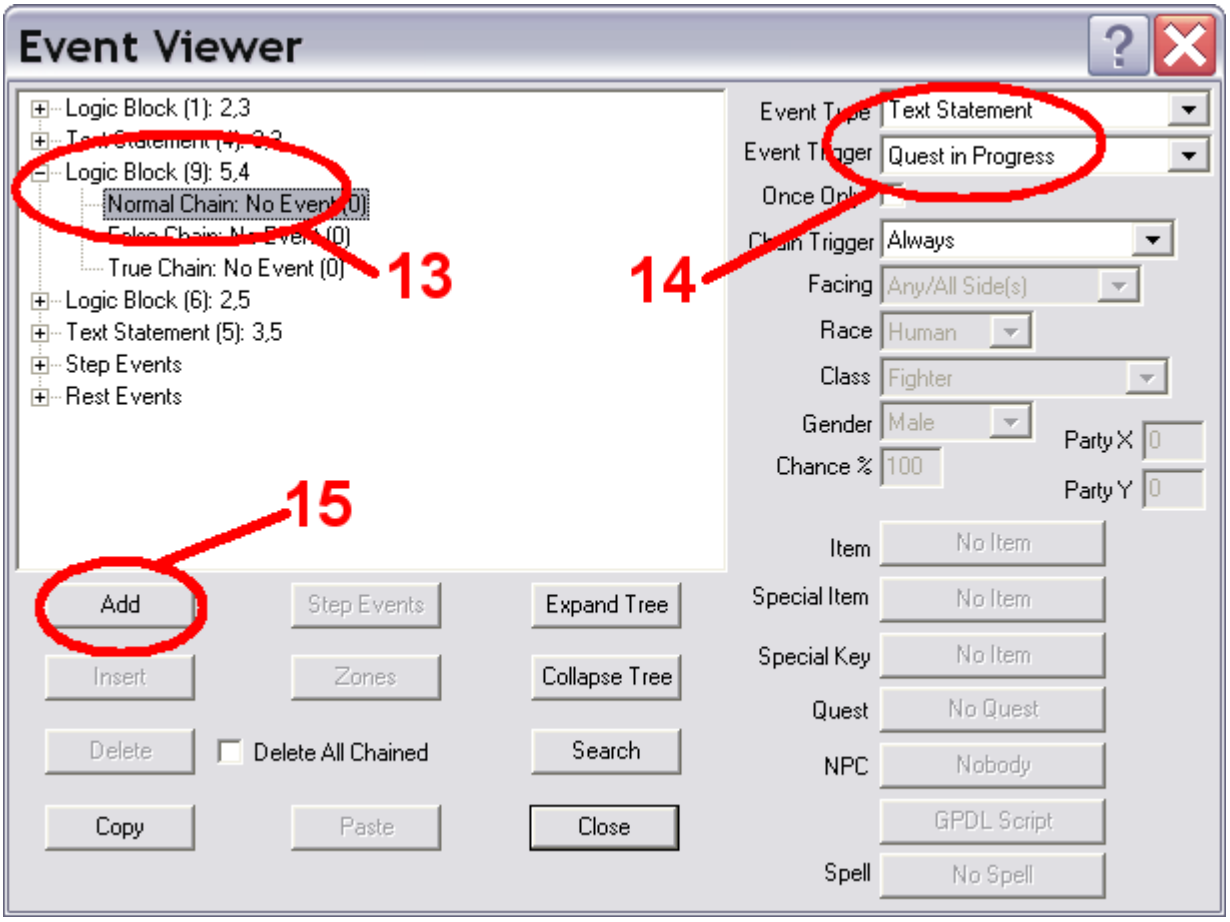
For those that are curious about why I chose 0 or 2 for the values in each of the quests, it was for the tactical reason that 0 in a quest means it in not in progress and any other positive number means that the quest is in progress and 2 happens to be a positive number other than 0.
The script is:

```
$VAR dayOfMonth;
$VAR phase;

dayOfMonth = $GET_PARTY_DAYS() %# 28;
phase = dayOfMonth /# 7;

$SET_QUEST("moon_full", (phase ==# 0) *# 2);
$SET_QUEST("moon_waning", (phase ==# 1) *# 2);
$SET_QUEST("moon_new", (phase ==# 2) *# 2);
$SET_QUEST("moon_waxing", (phase ==# 3) *# 2);

$RETURN 2;
```

13. For our Observatory we will use 4 Text Statement events that are chained after the Logic Block event. In the event editor, your Logic Block event should still be highlighted. Click on the plus next to it to open the chain. Hightlight "Normal Chaine: No Event (0)".
14. Click on the Event Type menu to choose "Text Statement" from the list. This time, we are also concerned with the Event Trigger menu right below the Event Type menu. Select Event Trigger and scroll down and select

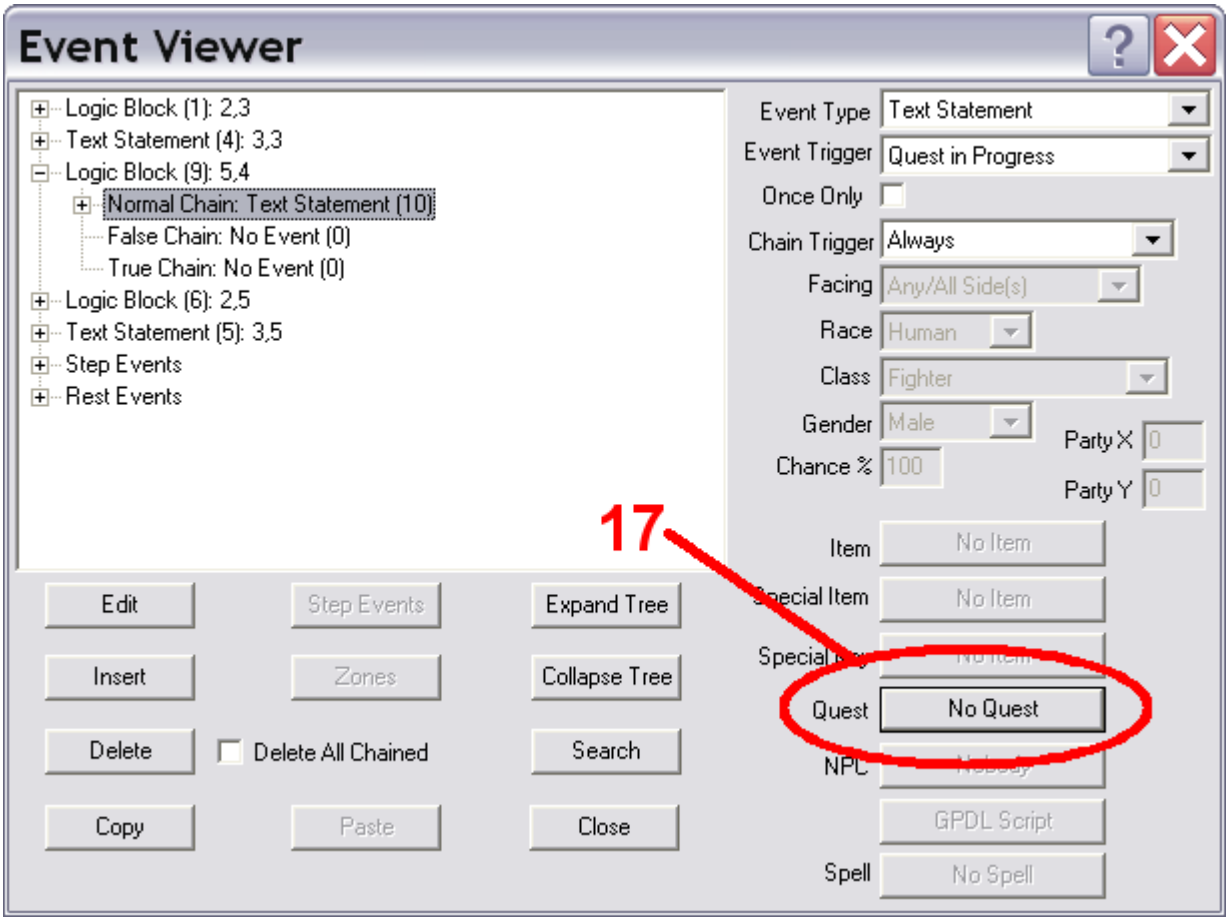
"Quest in Progress".

15. Click "Add".

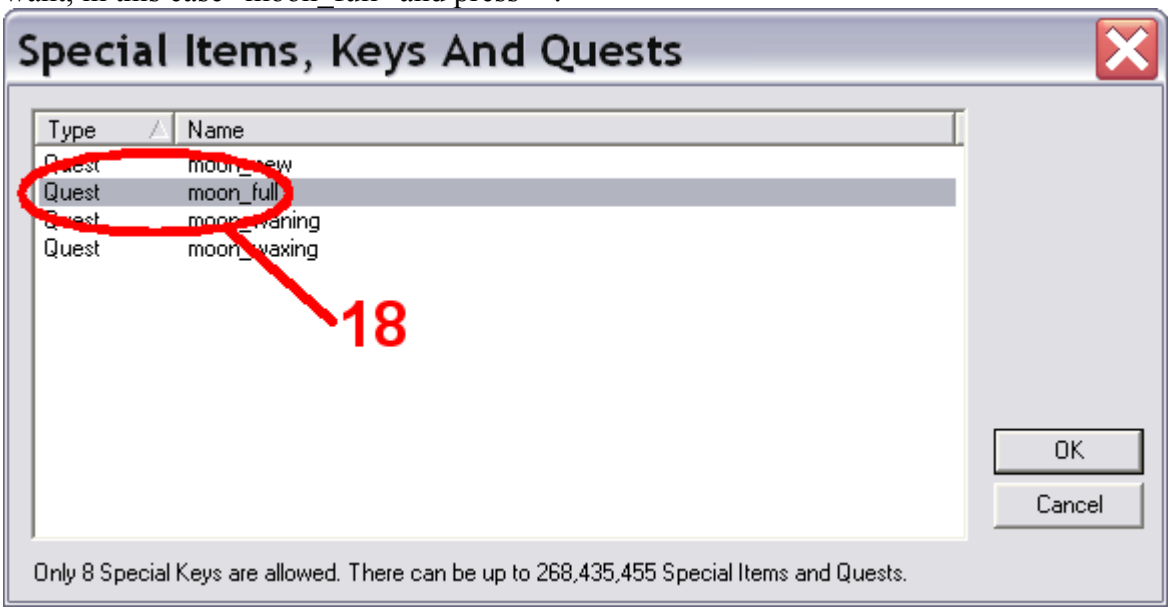


16. In the Text Statement Event, write something appropriate, such as, "It looks like a Full Moon tonight." Click "OK".

17. Now that you are back in the Event Editor, you will notice that the Quest button on the lower right of the box is no longer greyed out. Click "No Event".



18. The dalog box that appears will have a list of all available quests for you to choose from. Select the one you want, in this case "moon_full" and press "".



19. Repeat steps 13 through 18 three times for the other phases of the moon, using appropriate text and selecting the appropriate quest in the called for spots. The order of the moon cycle for this tutorial is full, waning, new, waxing.
When you're done, close the Event Editor and save your work. Now would be a great time to test your work.