

# The Solar System with Laboratory

## Fall 2025 Syllabus

## Physics 1052 Section 001

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### Meet Your Instructor



*Dr. Megan Nieberding*  
(she/her/hers), Instructor



**Office:** Physics Building, Room 209D



**Email:** [megan.nieberding@unt.edu](mailto:megan.nieberding@unt.edu)



**Help Sessions:** *Monday from 2-3pm* on Teams and in person,  
*Thursday from 11am-noon* on Teams and in person,  
or by appointment.

My research background is Physics Education Research, which focuses on developing and implementing teaching strategies that improve student learning in Physics courses. I am passionate about making physics and astronomy a better learning environment for students...especially given the reputation that physics has! I hope by the end of the semester you have an appreciation for astronomy and the solar system and I look forward to working with you this semester.

### Key Information

**Credit hours:** 3



#### **Classroom:**

Environmental Science Building  
(ENV) 130 + Lab Classrooms  
(see *Lab Syllabus* for details)



#### **Class Meeting Times:**

Tu/Th 9:30 – 10:50 AM  
and self-scheduled labs  
(see *Lab Syllabus* for details)



#### **Course Websites:**

Canvas and  
ExpertTA

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## Frequently Asked Questions:

### 1) What am I going to learn?

#### (Course Description, Structure, and Objectives)

This introductory astronomy course offered by the UNT Physics Department provides a brief history of astronomy, gives an overview of the techniques and principles important in astronomy, while exploring the planets of our solar system.

### Course Objectives

This course is a part of the Life and physical sciences core. Courses in this category focus on describing, explaining and predicting natural phenomena using the scientific method. Courses involve the understanding of interactions among natural phenomena and the implications of scientific principles on the physical world and on human experiences by fostering skills associated with the four core objectives:

- *Critical Thinking Skills*, including creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
- *Communication Skills*, including effective development, interpretation and expression of ideas through written, oral and visual communication
- *Empirical and Quantitative Skills*, including the manipulation and analysis of numerical data or observable facts resulting in informed conclusions
- *Teamwork*, including the ability to consider different points of view and to work effectively with others to support a shared purpose or goal

### Course Structure

This class is classified as “In-Person” which requires in-person participation during the scheduled class periods. Additionally, this course has a lab section as well. ***Please see the Lab Syllabus for more information about the structure of the labs.***

At the same time, this course has digital components. To fully participate in this class, students will need internet access to reference content on the Canvas Learning Management System and utilize the ExpertTA learning platform.

## 2) What do I need to buy?

### Required Materials

I know that college can be expensive, so I am only asking you to buy one thing:

- ExpertTA homework system (<https://reg.theexpertta.com/USQ45TX-4A8F5D-3P1>)



This is our online homework system. You will need to click the link above in order to register for the class. Your ***first 14 days of ExpertTA are free***, so if you are still waiting for some financial aid to come in, wait to access the first homework assignment so you can extend your 14-day grace period into the first couple weeks of the semester. The cost is \$35 for each student.

### 3) Do I need anything else?

We will be using several FREE resources this semester:

- iClicker



iClicker lets you respond to questions I ask in class using your phone, laptop, or tablet. If you've never used iClicker before, you will need to **set up a free student account at <https://student.iclicker.com/#/login>** UNT has a campus subscription to iClicker meaning the software is FREE to students. You do not need to pay for access when you use your UNT

credentials to sign up for iClicker. You must register with your official UNT email for the software to be free to you. If you register under a different email, then you will not receive credit for your responses.

**At the beginning of each class, you must sign into iClicker (<https://student.iclicker.com/#/login>)** on the device you will use to respond to questions. You can then join the PHYS 1052 session for the day.

- OpenStax Astronomy textbook (<https://openstax.org/details/books/astronomy-2e>)



This is a free college-level astronomy textbook. You are expected to read sections of this book the day before each class (and complete the associated warm-up assignment). Occasionally, the required reading will come from a source other than this textbook. I will specify when this occurs and provide links to these other sources (all for free). Please see the course schedule for a complete list of daily readings.

- **Calculator**



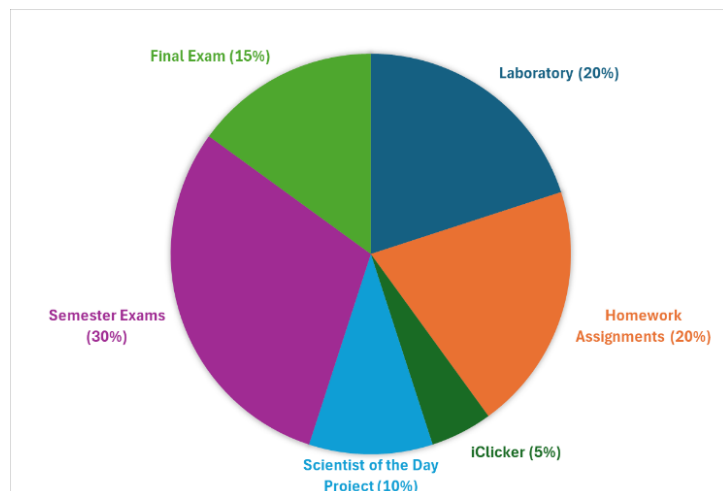
Okay, this isn't free *per se*, but you probably have one from high school or another college course. We will do a little bit of math in this class and you may find a calculator useful. When you are working on the homework, you can use any calculator you like – even an online calculator. **During exams, you can use any scientific calculator or graphing calculator as long as it cannot connect to the internet or be used to communicate with other people (so no calculator apps on your phone!)** If you don't have a calculator, see if you can borrow one from a friend or a roommate. If getting a calculator is a significant challenge, let me know. I am here to help!

### 4) Am I expected to come to class?

**Yes, attendance is required.** We'll be doing a lot of interactive questions and activities, since this is the best (and most fun!) way to learn the material. A good portion of your grade will be based on your attendance and participation in class.

## 5) How will you determine my grade?

### Assessing your Work



**Labs** will account for 20% of your final course grade. **Important information on the labs and how to schedule them can be found in a Lab Syllabus document which can be found in the 501 section of Canvas.** The Course Schedule at the end of the Syllabus lists the full course outline. It includes reading assignments and due dates for course work but does not include Lab work. You will need to review the Lab Section in Canvas (501 section) for that information.

There will be **10 Homework assignments**. Homework constitutes 20% of your final course grade.

There will be **3 midterm exams**. Your lowest midterm exam score will be worth 5% of your final course grade. Your middle midterm exam score will be worth 10% of your final course grade. Your best midterm exam score will be worth 15% of your final course grade. The **Final Exam** will be cumulative and is 15% of your final course grade

5% of your final course grade will be designated to your total **iClicker** score. Your iClicker score will be graded such that each answer question will count for 0.1 points for a correct response, and 0.9 points for responding.

There will be a **Scientist of the Day Project** worth 10% of your final course grade. In astronomy classes, we often talk about a limited number of scientists. But, there are so many individuals that can be role models for us that fall outside of the few we cover in class. Every student deserves the chance to see themselves in science. The goal of this project is for students to research and present a scientist that inspires them. More detailed information about this project will be posted on the Canvas page in September.

## 6) When are the exams?

The midterm exams are scheduled for **September 18, October 23, November 18**. The midterm exams will be held during class time. The final exam is **Thursday, December 11 from 8:00 am to 10:00 am**. All exams will be held at the Sage Hall Testing Center.

## 7) When are assignments due?

We will have homework throughout the semester, online through ExpertTA. ExpertTA Assignments will be **due on Fridays at 11:59PM**.

The Scientist of the Day Project will be due on **October 30<sup>th</sup> at the start of class**.

All **deadlines for the laboratory portion of this course can be found on the Lab Syllabus** which can be found in the 501 section of Canvas.

## 8) What are the cutoffs for letter grades?

The final class grade depends on your total class percentage. If you accumulate

- 90.0 – 100%, you will receive an A
- 80.0 – 89.9%, you will receive a B
- 70.0 – 79.9%, you will receive a C
- 60.0 – 69.9%, you will receive a D, and
- < 60.0 %, you will receive an F.

Grades on the border of a letter grade will not be bumped unless the student has completed the Exam Wrappers. There will be 3 Exam Wrappers after each semester exam. Each completed Exam Wrapper will add up to +0.7% of your final course grade. So, if a student completes 3 Exam Wrappers, the student can increase their final course score by up to 2.1%.

## 9) Will you drop assignments or accept late work?

Hey, I get it. I know that unforeseen events can sometimes disrupt life. Maybe you can't get to class one day or maybe you miss an assignment. I have built some flexibility into the grading scheme to make sure your grade won't unnecessarily suffer for issues and events that are out of your control. At the end of the semester, I will automatically drop the following:

- Your lowest 3 days of attendance credit (iClicker scores).
- Your lowest homework assignment.

This means the first three classes you miss won't hurt your attendance grade. You'll still need to keep up with content from class. I plan to post the PowerPoint slides to Canvas to help you catch up if you miss class...and to provide another resource for your studying.

You can also submit any **homework** assignment up to **7 days late**. The maximum score possible on a late homework assignment will start at 70% and will decrease by 10% each day after assignment due date.

## 10) Will you drop more assignments?

There are many valid reasons why someone might have to miss a class or an assignment, including (but not limited to) interviewing for a job, presenting at a conference, observing a religious commitment, participating on a sports team or performance group, attending a funeral, or recovering from an illness. Some absences are covered by the University's approved absence policy. If you have to miss class because of a reason that is excused by the University, then **we highly encourage you to request a University Approved Absence (<https://policy.unt.edu/policy/06-039>)**. The University will excuse absences for religious observances, significant personal and family emergencies, long term and ongoing health issues (both mental and physical), and participation in official University events (e.g., playing with one of UNT's sports teams or music groups). Getting this documentation not only helps you for this class – it may also help you in other classes as well!

The policy on dropped assignments is meant to give everyone the flexibility they need to balance these other obligations with your work for this class. **We will therefore not drop additional assignments or make other modifications to the grading scheme unless there is a well-documented reason for doing so.** To help clarify this policy, here are some answers to additional questions that we are commonly asked.

***If I have a valid reason for missing a day of class, will you drop that day from my attendance grade in addition to the 3 days you promised to drop?***

In general, no. The 3 days of dropped attendance grades are meant to account for the normal absences that often occur during a semester. If you have to miss a class (or two, or three) for any reason, then these will just be included in the 3 that are automatically dropped.

***But what if I have valid reasons for missing more than 3 classes?***

We may drop more than your 3 lowest days of attendance if you can provide documentation supporting the necessity of your absences from **all of the days** that you missed. For example, if you missed 5 classes and you want all 5 to be dropped from your attendance grade, you'll need to provide documentation for all 5 days. In other words, don't just provide documentation for 2 of those days and expect the other 3 to be automatically dropped as well. What sort of documentation will we accept? Doctor's notes, messages from ARS, notifications of University-approved absences, evidence of attending a conference or job interview, and letters from athletic coaches, performance directors, and other professors are all acceptable. We can't think of every possible form of documentation, so the above list is not meant to be comprehensive. You may always ask if a particular document is sufficient.

***But what if I skip a couple classes early in the semester, thinking that they would get dropped, and then I find out later in the term that I actually have to miss class for valid reasons?***

This is why it is **not** a good idea to skip class unless you need to. Save your dropped attendance days for when you really need them.

***I have to miss a class early in the semester and I'm not sure if I might miss others later on. What should I do?***

Get documentation! If, at the end of the semester, you have missed more than 3 classes, we can review this documentation and excuse these additional absences if warranted. Otherwise, you are good to go without documentation!

***What if I'm sick?***

We all get sick from time-to-time. If this happens to you, please stay home, both for your own benefit and to prevent spreading an illness to others in the class. Most colds will cause you to only miss a class or two, which can be dropped as part our attendance policy. If it's something more severe (e.g., influenza or COVID), then be sure to ask for a note from your doctor.

***What about dropping other assignments?***

The homework assignments are posted well in advance of their due dates, so you should be able to submit these on time, even if you are out-of-town or otherwise not able to attend a particular class. If you know you have an upcoming conflict (e.g., participating in a performance or sporting event), please plan your schedule accordingly so you can submit your work on time. Of course, there might be times when you forget about an assignment or just can't do it (perhaps because you are feeling too sick). I drop your lowest homework grade at the end of the semester in order to account for situations like these.

***When will you make adjustments to grades?***

At the end of the semester. It's actually easier for me to do all adjustments at once, when all the grades are in. So don't panic if you see a 0 for an assignment you know should be dropped. At the end of the semester, before I submit final course grades, I'll make sure to give you time to review our calculations of the various components

of your grade, after I have accounted for all dropped assignments. If you find a potential problem, you can let me know so I can fix it before I submit final grades.

### ***How can I get you my documentation for my absences?***

Please **e-mail** the documentation to Dr. Nieberding and title the email “*Documentation for Absence*”

### ***I don't think these policies will really help me with the situation I'm dealing with. What should I do? Do I need to drop the class?***

I created the above policies to strike a balance between being fair and transparent to all students while also not overwhelming me. These policies should cover the majority of issues experienced by the majority of students. However, I recognize that there may be some students who are experiencing more extraordinary challenges, including (but not limited to) long-term health issues (e.g., chemotherapy, concussions, mental health difficulties, etc.) and complex issues in their personal lives. **My top priority is to make sure that you are safe and getting the assistance you need. If you need any help connecting with campus resources, please reach out.**

With respect to your standing in this course, please also reach out if you feel that you might need additional considerations beyond what is provided by the above policies. While I cannot promise a particular outcome, I am more than happy to work with you to formulate a plan to help you proceed in the class and achieve your goals. This may include additional dropped assignments, extensions, or other adjustments to your grades for different components of the class. I don't want anyone to drop or withdraw from the course unnecessarily or prematurely.

If you do not feel comfortable sharing a personal aspect of your life with me, then you are under no obligation to do so – but please keep in mind that I can't respond to issues I am unaware of. The sooner you alert me to any potential, ongoing issues, the sooner I can work with you to develop a plan for how to best proceed. If you wait until the very end of the semester to ask for additional considerations, then our options will be significantly limited.

## **11) What if I miss an exam?**

Let me know as soon as you can if this happens. If you have an excused absence, then I will work with you to find alternate arrangements to take a make-up exam. I ask for 2 weeks notice in order to make alternative arrangements for an excused absence. Additionally, I will ask for relevant documentation to determine if an absence from an exam is excused.

If you miss an exam because of a mistake on your part (e.g., sleeping through it), then please still reach out to me. I will not be angry. We all make mistakes. I will still try to see if you can take a make-up exam, however, unexcused exam absences will incur a 20% penalty. It is my goal to return exams within a few days so you get prompt feedback on your progress so exams must be made up within two (2) consecutive days of the original Exam date. If Exams have been returned, makeup Exams cannot be provided.

## 12) Can I use Generative AI in this course?

Students in my physics and astronomy courses have shared that they like to use GenAI as a partner in learning. Students shared that they have conversations by asking questions (“Was there ever water on the surface of Mars?”) or get help with math by giving it a specific question (“How do you find the acceleration of an object with a mass of 2 kg that experiences a net force of 10 Newtons?”). While I am mostly confident that GenAI will give you correct answers to these questions, I have seen examples where it gives super wrong answers. So, while I encourage you to use this tool to help you study, maintain a critical eye, ask it to give you sources, and reach out if the information you get seems to contradict something we learned in class or does not make sense.

**You may not use Generative AI in this course to help you complete iClicker questions, Lecture-Tutorials, Homework, your Scientist of the Day Project, or Lab work.** You may use a tool to check your original written work for grammar/clarity. It is my expectation that the content you submit in this course is your original work.

I will always disclose how I use GenAI, and I expect the same from you. In accordance with the UNT Honor Code, unauthorized use of GenAI tools is prohibited. Using GenAI content without proper credit or substituting your own work with GenAI undermines the learning process and violates academic integrity. If you're unsure whether something is allowed, please seek clarification.

Please refer to the Academic Integrity Policy (PDF) (<https://policy.unt.edu/policy/06-049> ).

## 13) What if I need help in this course?

### Astronomy Help

Some of the concepts we're learning are challenging. If you don't understand them at first, that doesn't mean you can't succeed. Learning is a process and there are many ways to get help for this class.

If you find yourself needing help after attempting the homework or studying on your own, please know there are multiple options available to you.

- Meeting with me during my help session hours
  - I encourage you to talk to your classmates or come talk to me. I truly enjoy teaching astronomy, and I am more than happy to help you outside of class either individually or in groups.
  - Feel free to drop by during my help session hours or schedule an appointment via email. I will respond to emails regularly between the hours of 9 AM – 5 PM Monday through Friday and will do my best to respond in a timely fashion on the weekend and in the evening.
  - If you have emailed me and I have not responded within 48 hours, please feel free to reach out to me again making sure I got the email. I teach over 300+ students and it is easy for an email to slip by.
- **FREE tutors** provided by the **Physics Instructional Center**
  - The goal of the Physics Instructional Center (PIC) is to provide students with the tools necessary to expand their knowledge of the world of astronomy and physics. Here you will be able to meet with undergraduate tutors to discuss any questions you may have about content in this course.
  - The PIC is located in Hickory Hall room 266.
  - The most up to date hours of operation of the PIC can be found on the PIC's website (<https://physics.unt.edu/undergraduate-studies/pic.html>)



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## Policies

### 1) Accommodations

**If you have any physical access needs, please email the lab instructor (email is on the lab syllabus) 3 weeks prior to attending an observatory lab so that we can provide accessible transportation from campus to the observatory.**

The University of North Texas makes reasonable academic accommodation for students with disabilities. Students seeking reasonable accommodation must first register with the Office of Disability Access (ODA) to verify their eligibility. If a disability is verified, the ODA will provide you with a reasonable accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You may request reasonable accommodations at any time; however, ODA notices of reasonable accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of reasonable accommodation for every semester and must meet with each faculty member prior to implementation in each class. Students are strongly encouraged to deliver letters of reasonable accommodation during faculty office hours or by appointment. Faculty members have the authority to ask students to discuss such letters during their designated office hours to protect the privacy of the student. For additional information, refer to the Office of Disability Access website (<https://studentaffairs.unt.edu/office-disability-access>). You may also contact ODA by phone at (940) 565-4323.

### 2) Supporting Your Success and Creating an Inclusive Learning Environment

I value the many perspectives students bring to our campus. Please work with me to create a classroom culture of open communication, mutual respect, and belonging. All discussions should be respectful and civil. Although disagreements and debates are encouraged, personal attacks are unacceptable. Together, we can ensure a safe and welcoming classroom for all. If you ever feel like this is not the case, please stop by my office and let me know. We are all learning together.

### 3) Technical Support

The UIT Helpdesk will provide support with any issues you might have with Canvas and they may be able to help you troubleshoot other computer issues. 940-565-2324 or [helpdesk@unt.edu](mailto:helpdesk@unt.edu). Canvas does not work well with some browsers. Chrome browser does support Canvas and MasteringAstronomy.

### 4) Guidelines for Generative AI

#### Use of AI

- **Accuracy:** Generative AI may invent both facts and sources for those facts. Verification is your responsibility, whether the source of the error is you or the AI makes no difference. You need to check the facts, the quotes, the arguments, and the logic, and document what you did to validate your material.
- **Attribution:** All ideas that are not originally your own have a source and that source must be attributed. Please be aware that generative AI tends to invent sources. You have a two-fold obligation with respect to attribution:
  - ***If a source is identified***, find and attribute the original source of the idea, identify the location of the text within the source, and provide a working link to the location (if the source is available online). If you are not able to locate the source, delete that content.

- **Document the process by explaining how you used generative AI** in a work statement that will accompany your submission of major projects in the class. As you submit an assignment, develop, and include an appropriate version of the below statements:
  - “I attest that this project did not use AI at any stage in its development or in the creation of any of its components.”
  - “I attest that this project made use of AI in the following ways:” (please specify).

## 5) Syllabus Changes

The professors reserve the right to make changes to the syllabus including assignment due dates and test dates. These changes will be announced as early as possible.

# January

# 2025

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
30	31	01	02	03	04	05
06	07	08	09	10	11	12
13 -Review of Course Syllabi: Lecture and Lab -Ch. 1: A Modern View of the Universe-Astro	14	15	16	17	18	19
20 MLK HOLIDAY No classes	21	22 Begin Ch 2: Discovering the Universe for Yourself – Observational Astro	23	24 Due at 11:59PM: Introduction to MasteringAstronomy & HW Ch 1 & Lab Orientation Quiz	25	26
27 Begin Ch 3: The Science of Astronomy – History of Astro	28	29 PHYS 1052 Labs begin (see PHYS1052 Lab Syllabus for more details)	30	31 Due at 11:59PM: HW Ch 2	01	02

# February

2025

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
27	28	29	30	31	01	02
03 -Finish Chapter 3 -Exam 1 Review Questions if time	04	05	06	07 Due at 11:59PM: HW Ch 3	08	09
10 -Ch 4: Making Sense of the Universe - Motion, Energy, and Gravity	11	12	13	14 UNIT 1 EXAM Covers Ch 1 -3, HW's Ch 1-3	15	16
17 - Finish Ch 4 - Ch 5: Light and Telescopes: Reading Messages From the Cosmos	18	19	20	21 Due at 11:59PM: HW Ch 4	22	23
24 - Finish Ch 5 - Review for Exam 2 if there's time	25	26	27	28 Due at 11:59PM: HW Ch 5	01	02

# March

2025

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
24	25	26	27	28	01	02
03 - Ch 6: Formation of the Solar System	04	05 UNIT 2 Exam Covers Ch 4 & 5, HW's Ch 4 - 5	06	07	08	09
10	11	12	13	14	15	16
SPRING BREAK No Classes						
17 - Finish Ch 6 - Ch 7: Earth and the Terrestrial Worlds	18	19	20	21 Due at 11:59PM: HW Ch 6	22	23
24 - Finish Ch 7 - Ch 8: Jovian Planet Systems	25	26 Scientist of the Day Project Due: at the start of class	27	28 Due at 11:59PM: HW Ch 7	29	30
31 - Finish Ch 8 - Review for Exam 3 if there's time	01					

# April

# 2025

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
<b>31</b>	<b>01</b>	<b>02</b>	<b>03</b>	<b>04</b> Due at 11:59PM: HW Ch 8	<b>05</b>	<b>06</b>
<b>07</b> - Ch 9: Asteroids, Comets, and Dwarf Planets	<b>08</b>	<b>09</b>  UNIT 3 Exam Covers Ch 6-8, HW's Ch 6-8	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>
<b>14</b> - Finish Ch 9 - Ch 10: Other Planetary Systems - Exoplanets	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b> Due at 11:59PM: HW Ch 9	<b>19</b>	<b>20</b>
<b>21</b> - Finish Ch 10 - Ch 11: Our Star	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b> Due at 11:59PM: HW Ch 10	<b>26</b>	<b>27</b>
<b>28</b> - Review for Final Exam	<b>29</b>	<b>30</b>	<b>01</b>	<b>02</b>	<b>03</b>	<b>04</b>

# May

# 2025

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
<b>28</b>	<b>29</b>	<b>30</b>	<b>01</b> <i>Last Day of Classes</i> Due at 11:59PM: HW Ch 11	<b>02</b> <i>READING DAY</i> No Classes	<b>03</b> <b>CUMULATIVE FINAL EXAM:</b> 10:00AM - 12:00PM	<b>04</b>
<b>05</b>	<b>06</b>	<b>07</b>	<b>08</b>	<b>09</b>	<b>10</b>	<b>11</b>
<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>
<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>
<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>	<b>31</b>	<b>01</b>

