SuperNova

COMPUTER INTERFACE
FOR NOVADREAMER®
USER MANUAL

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WARNING: This Product Attracts Every Other Piece of Matter in the Universe, Including the Products of Other Manufacturers, with a Force Proportional to the Product of the Masses and Inversely Proportional to the Square of the Distance Between Them. Disclaimer void in dream world.

Contents

Introduction

The SuperNova Interface and the NovaDreamer

Please understand before you begin to learn about your SuperNova Interface that the Interface is designed only for use with a NovaDreamer: it cannot operate without a NovaDreamer! In addition, this manual assumes that the reader is familiar with the operation of the NovaDreamer. Although some review material is presented for those who may not have used their NovaDreamer for a while, it is highly recommended that you read the complete NovaDreamer manual before either reading this manual or using the SuperNova Interface. The NovaDreamer manual contains key information on how the NovaDreamer works to help you have lucid dreams and how you must train your own brain to respond to the NovaDreamer's cues.

For best results, it is recommended that you use the NovaDreamer and the Interface in conjunction with the Lucidity Institute's Course in Lucid Dreaming, which provides a complete home study course in methods of improving dream recall, inducing lucid dreams and using them to improve your life. Above all, remember that the number one requirement for success in lucid dreaming is a focused, motivated mind!

Uses and Advantages of the SuperNova Interface Software

Using the SuperNova Interface software will enhance the value of your NovaDreamer in several ways. You will be able to set the NovaDreamer more rapidly and conveniently, bypassing the manual dial and button controls on the NovaDreamer mask. You will obtain clear visual feedback on the results of your sessions sleeping with the NovaDreamer and you will be able to save a series of data records to help you evaluate your progress over time and identify your ideal cue settings. You can enter your personal dream data and even dream reports, so that the SuperNova Interface can act as your dream log as well as personal sleep laboratory. Additional features added by using the NovaDreamer Software are a Wake-Alarm to replace your alarm clock and a Cue Window to enable you to restrict cues to the times when you will be most receptive to them. If there are multiple NovaDreamer users in your family or group, each individual can keep a separate log of sleep and dream data. After you have collected sufficient data, you will be able to create a simultaneous plot of all of your nights with the NovaDreamer which will provide information on the timing of your REM periods.

Summary of NovaDreamer Functions with SuperNova Interface

The NovaDreamer Lucid Dream Induction Device is a soft mask worn while you sleep. It has sensors placed before the eyelids to detect the presence of the rapid eye movements that herald the onset of REM sleep, in which most dreaming occurs. When the NovaDreamer detects rapid eye movements it triggers a cue: a series of light flashes from LEDs in the mask and/or beeps from the speaker placed behind the foam over the user's forehead. The cues are intended to become incorporated into the user's ongoing dream (as lights or sounds within the dream) just like the sound of an alarm clock or phone ringing sometimes becomes a part of one's dream.

NovaDreamer users must prepare their minds in advance to identify the cues in the dream as signs that they are dreaming. Once you have realized you are dreaming, you are, by definition, lucid dreaming, and anything is possible! Pages 12 to 16 of the NovaDreamer manual discuss the mindset required for successful lucid dream induction with the NovaDreamer. More information and exercises to improve your ability to become lucid are in the Lucidity Institute's Course in Lucid Dreaming.

In addition to establishing the proper mindset, NovaDreamer users must also select the proper cue settings for their individual requirements. The ideal cue is neither so annoying as to wake the person up, nor so gentle that it does not enter into the dream. A perfect cue will appear in the NovaDreamer user's dream without awakening the user. Finding the perfect cue takes experience and understanding of the nature of your own sleep: are you a light sleeper, awakened by the slightest disturbance, or a deep sleeper, who can sleep through a party in your bedroom? More details on finding the best cue for you are below.

The NovaDreamer will continue to give cues as long as the user is still making rapid eye movements. There is a refractory period, a minimum time between cues, of five minutes. Pressing the button beneath the moon icon on the front of the mask will terminate a cue and set a countdown delay of 10 minutes during which the NovaDreamer will not monitor eye movements or give cues (this allows a user awakened by a cue to return to sleep undisturbed, as the NovaDreamer will also detect the small eye movements people make while they are lying in bed awake). Multiple presses of the button add ten minutes to the countdown delay, to provide longer periods of time to return to sleep. Holding the button down for 1 second will "zero" the delay.

Pressing the button on the NovaDreamer also serves the very important function of "Reality Testing." When the button is pressed, the NovaDreamer emits a simultaneous flash and click. Experience has shown that people frequently dream of awakening wearing the NovaDreamer mask, and that when dreamers press the

dream version of the NovaDreamer button, it rarely, if ever, responds with the normal flash and click. This provides a valuable clue allowing users to convert false awakenings to lucid dreams.

Because the ability to recall dreams frequently (at least two per night) is essential for lucid dreaming, the NovaDreamer includes a feature called the Dream Alarm. Research has shown that the best way to increase dream recall is to awaken a sleeper directly from REM sleep. When the Dream Alarm is turned on, the NovaDreamer will awaken you with a bright and loud cue five minutes after it detects that you are in REM sleep. Then you can immediately reflect on what you were just dreaming. Repeated practice will increase your natural ability to remember your dreams.

The SuperNova Interface adds a new alarm feature to your NovaDreamer, a Wake-Alarm. Exactly as with an ordinary alarm clock, you set the time you want to awaken and turn the alarm on.

Another feature added by the SuperNova Interface Software is a Cue Period, which enables you to select a specific period of time in which you want to receive cues. This allows you to limit cues to the times in which you are most likely to respond to them and have lucid dreams. Research and experience has shown that people are more likely to become lucid in their dreams in the second half of a night's sleep. Furthermore, as you accumulate data on your sleep with the SuperNova Interface Software, you may be able to identify certain times of day in which you are most likely to have lucid dreams, and can use this information to limit cues to that period using the Cue Period function.

About this Manual

This manual is for both the Apple Macintosh® and Microsoft Windows®95 versions of the SuperNova Interface software. The two versions are very similar in most respects, although there are, of course, differences in details indicated by "(Mac)" or "(W95)." Don't worry if an illustration doesn't look exactly like what the program looks like on your computer; it's probably just the other version.

Throughout the manual, choosing a particular menu item is indicated with the following notation: *Menu > Next level menu or item > Next level menu or item, etc.* So for example, "File > Save" means "Choose Save under the File menu."

This manual assumes that you have a basic understanding of how to use your computer (e.g., how to copy, delete, and rename files, etc.). If you don't know how to do these things, please read the appropriate manual or consult your computer dealer. On the other hand, perhaps you should do a State Test first to find out whether or not you're dreaming!

Getting Started

Connecting the SuperNova Interface Box Hardware

Note that your SuperNova may come with the appropriate cables already attached to the Interface Box (IB), so some of the following steps may have already been done for you. Refer to the block diagram below.

① **Before attaching anything, power down your computer!** Connect the IB-PC cable to the IB and to a free serial port (W95) or the modem port (Mac) of your computer. PC users may need an adapter (DB9 to DB25) if the available serial port has a DB25 instead of a DB9 connector. Note which serial port you are using (W95: COM1-4). If you have an external modem attached to your only serial or modem port, you may want to purchase a serial A/B switch box to make it convenient to switch between your modem and SuperNova IB.

② Connect the power supply (PS) to the power jack (closer to the middle, marked with red paint) on the Interface box, and plug the PS into a wall socket (110 VAC). The green power LED should illuminate. (The PS provides 12V DC @ 100ma, tip positive.) TAKE CARE NOT TO PLUG THE POWER CORD INTO THE NOVADREAMER CONNECTOR ON THE IB!

③ Make sure your NovaDreamer is set to Mode 0. Connect the IB-ND cable to the outside jack on the IB, and to the jack on the top of the NovaDreamer.

√ Turn on your computer and proceed with software installation.

Plug into Serial (W95) or Modem (Mac) Port ❶
(Power down your computer first!)

IB-PC cable

Power LED
(glows green when PS is connected to 110V.)

SuperNova Interface Box (IB)

Plug into 110 VAC Power Line ❷

Plug into NovaDreamer ❸
(Switched to Mode 0!)

IB-ND cable
(grey plugs)

(black plug with red mark) PS

IB-PS cable

❹ **Turn On Your Computer...**
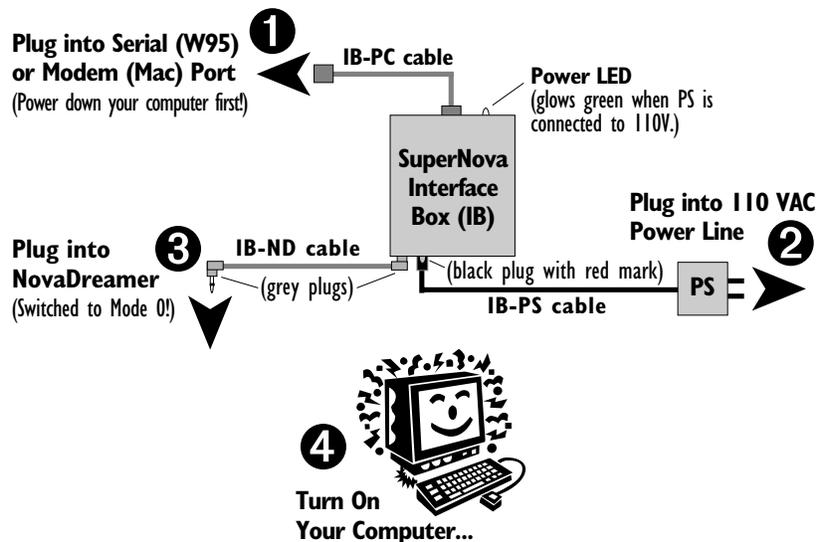
Installing the SuperNova Interface Software

Apple Macintosh® installation

Requirements: System 7.0 or later, a free modem port, 500K of available space on your hard drive and approximately 1000K of free RAM available.

1. Insert the *SuperNova 1.1* disk into your floppy disk drive and wait for the disk icon to appear on your desktop.

2. Copy (drag) the folder titled *SuperNova Interface* from the floppy disk icon to your hard disk icon. Afterwards, eject the floppy disk.)

3. Open the folder (double click or choose File > Open) and double click on the application *SuperNova 1.1* to begin using the SuperNova Interface Software.

Microsoft Windows®95 installation

Required: Windows®95, 500K of available space on your hard drive, 1024K of RAM available, and a free serial port (COM1-4, see below).

1. Insert the *SuperNova 1.1* Software disk into your floppy disk drive and wait for the disk icon to appear in the *My Computer* window.

2. Drag or copy the folder titled *SuperNova Interface* from the floppy disk icon to your hard disk icon. When done copying, eject the floppy disk.

3. Open (double click) the *SuperNova Interface* folder and double click on the application *SuperNova_1.1.exe* to begin using the SuperNova Interface Software.

4. When the program first starts up the first time it will ask you to select a serial port. Choose the port to which the IB hardware is connected. (COM1-10; usually it will be COM1. If you have a serial mouse and a modem already connected, COM3 is likely to be the port you are using. You may need to re-configure your serial port or card; if so, consult your computer manual or computer dealer. If all your serial ports are in use, there are two solutions: either buy a serial card or a serial A/B switch box.)

Using the SuperNova Interface Software

The Screen Display Windows

When you open the SuperNova Interface Software application, your computer will display two windows. The upper window is called the "Data Window" and the lower one, the "Settings Window." The first time you open the SuperNova application and anytime you open the application directly (rather than selecting a previously saved document), the Data Window will be labeled "Untitled 1" and it will contain no data. The bottom window will be labeled "Settings 1," and it will contain the default cue settings of the NovaDreamer.

The Data Window

The Data Window will display the data collected by the NovaDreamer from a sleep session after you have downloaded it through the Interface box (instructions for downloading below.) Three types of data are displayed on the Data Window: Sleep data, Personal Dream Log data, and Cue data.

- The Sleep data fields include RECORD START and END, MODE, DURATION (of sleep period collected), CUE COUNT, CUES NOT DELIVERED and the CUE PLOT. These are described in detail below (under Interpreting the Data from the NovaDreamer-Data Window). Also, the "Help" field located directly below the Cue Plot on the Data Window provides a brief description of whichever field you have selected. (Select a field by placing the cursor over it and clicking. You can also move through the fields by using the Tab key to go forward and Shift-Tab to go back).

- The Personal Dream Log data fields are DREAMS, LUCID DREAMS, RTLDs (Reality Test Lucid Dreams), QLDs (Cued Lucid Dreams), WILDs (Wake Induced Lucid Dreams), DREAM CUES, CUE AWAKENINGS, and COMMENTS

(text box). These are described in detail below. Again, the "Help" field below the Cue Plot gives a brief description of the selected field. Note that Personal Dream Log data is entered by the user, not downloaded from the NovaDreamer.

- The Cue data fields are CUE DURATION, CUE INTENSITY, CUE RATE, CUE TYPE, WAKE-ALARM, WAKE-TIME, DREAM-ALARM, INITIAL DELAY, SENSITIVITY, CUE PERIOD START and CUE PERIOD END. These fields display the cue settings that were in use during the collection of the data currently displayed in the Data Window. Note that you cannot change the Cue data fields. Alteration of cue settings is done using the Settings Window.

The Data Window can also be used to display data from previous sessions sleeping with the NovaDreamer. You will collect a series of sleep sessions in a single Sleep Log. By using the Show button at the bottom of the Data Window you can select which record you wish to view. Records are automatically numbered in sequence and show date, Record Start and End Time, and Duration of record. The record currently displayed is identified in the bottom right corner of the Data Window (e.g. "Record 2 out of 3"). Information on how to create a Sleep Log is given below under, "Creating a Personal NovaDreamer® Sleep Log."

The Settings Window
The Settings Window is used for setting the NovaDreamer cues to suit your individual needs. After you choose which cue settings you want to try, you upload them to the NovaDreamer by clicking on the "Set NovaDreamer Settings" button at the bottom of the window. Of course, the NovaDreamer must be connected to the Interface box and the box to the computer before you upload! (See "Connecting the NovaDreamer to a Personal Computer" above for instructions). The "Help" box at the top of the Settings Window will give a brief description of the cue parameter you have selected, and they are described in more detail below. (Select a cue parameter field by placing the cursor over it and clicking or with the Tab key. Field selection will only work in the Settings Window if this window is selected [active]. To select the window, place the cursor anywhere over it and click.)
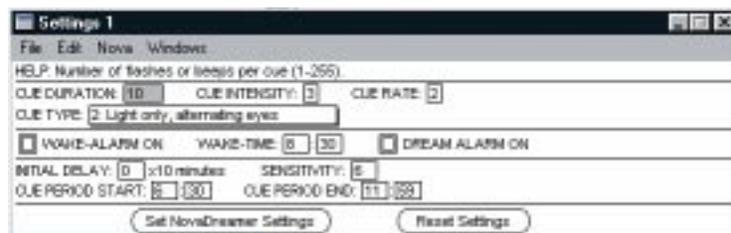
The cue setting fields are as follows:

- CUE DURATION (1-255): Determines the number of times the LEDs flash each time the NovaDreamer delivers a cue. The length in seconds of the resultant cue is equal to the Cue Duration divided by the Cue Rate, described below.

- CUE INTENSITY (1-6): This determines how bright the lights flash and how loud the sound is. Note that you may select whether you get light or sound cues or both with Cue Type, described below.

- CUE RATE (1-6 per second): Sets the number of times the lights flash or the speaker beeps per second during each cue.

- CUE TYPE (select from a menu of 6 options): The different cue types are:

   Type 0: External trigger cue only *This is for use with the Dream Speaker or any other peripheral to which you can attach the NovaDreamer and have it trigger a cue through the peripheral device. If this Cue Type is selected without a peripheral device, no cues will be given, but the NovaDreamer will collect data about times when cues would have been given (i.e., when you were dreaming either in REM sleep or at sleep onset).*

   Type 1: Light only, flashing in both eyes simultaneously

   Type 2: Light only, alternating flashes in left and right eyes

   Type 3: Sound only

   Type 4: Light and sound, flashing in both eyes simultaneously

   Type 5: Light and sound, alternating flashes in left and right eyes

- WAKE-ALARM ON: Clicking in this box (when activated box will have an "X" in it) will enable the alarm to awaken you at the end of your sleep period, just like an alarm clock. The first 15 seconds of the alarm uses the current setting of the Cue Type; the next 15 seconds is a loud flashing and beeping; the last 60 seconds is a siren-like warble. Use WAKE-TIME setting, described below, to set the alarm time.

- WAKE-TIME: Set the hours and minutes, in 24-hour time, of the time when you want the Wake-Alarm to go off. (24-hour time in a nutshell: Midnight=0:00; 1AM=1:00; ... , Noon=12:00; 1PM=13:00; 2PM=14:00; ..., 11PM=23:00. In short, between 1PM and 11:59PM add 12 hours; the Midnight hour=0:00-0:59.)

- DREAM-ALARM ON: Clicking in this box (when activated, the box will have an "X" in it) will turn on the Dream-Alarm, which will awaken you 5 minutes after

the NovaDreamer detects that you are in REM sleep and therefore dreaming. See "Summary of NovaDreamer Functions with NovaDreamer Additions" above for more on the Dream-Alarm.

- INITIAL DELAY (0-60): The number entered here, times 10 minutes, equals the minutes of countdown time of the INITIAL DELAY. The Initial Delay is a feature that allows you to get to sleep without the NovaDreamer responding to the eye movements you can't help making while lying in bed awake. After you upload the Cue Settings to the NovaDreamer, each time you turn the NovaDreamer on (turn the dial to a Sleep Mode, 1, 2, 3, or 4—see below), it will begin to count down the number of minutes set in the Initial Delay. During the delay period, the NovaDreamer will neither collect data, nor give cues. In general, if data collection is desired, it is preferable to use the Cue Period feature (see below) to delay cues to the optimal time of night and use mask button presses (each press of the mask button starts or adds ten minutes of delay countdown) for allowing time to get to sleep after mid-sleep awakenings. We recommend that you use an Initial Delay of 60 minutes in this case.

- SENSITIVITY (1-10): The sensitivity of the detector circuit determines how many cues you will receive in a sleep period. Because everyone's face and eyes are unique in structure and skin tone, the amplitude of the signal picked up by the eye movement detectors in the NovaDreamer varies widely. Therefore, it is necessary for each user to discover the correct sensitivity setting for their own face. This usually requires a few nights of use. The proper sensitivity setting is generally one that leads to somewhere between 5 and 20 cues in 8 hours of sleep. Deep sleepers may require more cues than light sleepers (more cues leading to increased likelihood of having cues enter dreams). See "Selecting the Right Cue Settings for You" below for help in choosing the right sensitivity.

- CUE PERIOD START: This field refers to the time of day or night when the NovaDreamer will begin to give cues if it detects REM sleep. Unlike with the Initial Delay, the NovaDreamer will monitor your eye movements and record data on times when cues would be delivered because of rapid eye movements, even during the time when the Cue Period is not on. Set it in the same way as the Wake-Alarm described above, using 24 hour time. A good general rule is that the most fruitful time for lucid dream induction is the second half of a night's sleep, or after 45 minutes of napping. You may identify your own ideal time for lucid dreaming after accumulating several weeks of data on your sleep in a personal Sleep Log. If you want the Cue Period to be on all the time, set CUE PERIOD START to 12:00 and CUE PERIOD END to 11:59.

- CUE PERIOD END: Set the time for the NovaDreamer to stop giving cues with this field. For instance, if you will be out of bed by 10:00 AM, setting the CUE PERIOD END time for 10:00 will prevent the NovaDreamer from giving and collecting data on cues given after you are awake and moving around. Don't forget to use 24 hour time! If you want the Cue Period to be on all the time, set CUE PERIOD START to 12:00 and CUE PERIOD END to 11:59.

Setting the NovaDreamer with the SuperNova Interface

Entering Cue Settings

Selecting the Right Cue Settings and Sensitivity for You

Cue Settings There are two ways to approach finding your ideal cue settings. One is to use the Preset Sleep Modes of the NovaDreamer, selecting one based on your belief about the type of sleeper you are. For information on the Light, Medium and Deep Sleep Modes, see page 10, number 2, "Pick a sleep mode," of the NovaDreamer Operation Manual. After sleeping with the NovaDreamer, downloading your data for a night or two and looking at your results, you may find you can select a custom setting that will work better for you. Then you can use the SuperNova Interface to choose your desired cue settings (DURATION, INTENSITY, RATE, and TYPE) and upload them to the NovaDreamer. To use your custom settings, you must set the NovaDreamer to Mode 1, the "Adjustable Sleep Mode."

MODE SETTINGS MUST BE MADE MANUALLY WHEN YOU START YOUR NIGHT, BY TURNING THE DIAL ON THE MASK TO EITHER MODE 1 (ADJUSTABLE), MODE 2 (LIGHT SLEEP), MODE 3 (MEDIUM SLEEP) OR MODE 4 (DEEP SLEEP). THE NOVADREAMER INTERFACE SOFTWARE CANNOT SELECT THE MODE TO BE USED.

Note that if you plan to use Preset Sleep Modes 2, 3, and 4 the SuperNova Interface will set the WAKE-ALARM, WAKE-TIME, DREAM ALARM, INITIAL DELAY, SENSITIVITY, CUE PERIOD START and CUE PERIOD END. However, it will not set the CUE DURATION, CUE INTENSITY, CUE RATE or CUE TYPE, because the values for these are locked in by the Preset Sleep Modes (see numbers 4, 5, and 6 of the "Tutorial" on page 8 of the *NovaDreamer Operation Manual* for the cue settings of the Preset Sleep Modes).

Sensitivity After the first night of sleeping with your NovaDreamer, first download the night's record to your computer (see "Getting Data and Settings from the NovaDreamer®" below). Then find out how many cues you received by looking at the Cue Count in the Data Window. Also look at Cues Not Delivered (cues that would have been given if they fell within the Cue Period). The sum of these numbers should be between 5 and 20 for an 8 hour night unless you are a very deep sleeper (in which case you may want more than 20 cues) or a very light sleeper (in which case you may

want less than 5 cues). If you need to adjust the number of cues, increase the sensitivity for more cues, and decrease it for fewer cues. Don't forget to send your new settings to the NovaDreamer before using it again.

Default Cue Settings

The NovaDreamer comes from the factory with the Adjustable Sleep Mode (Mode 1) preset to CUE DURATION 10, CUE INTENSITY 3, CUE RATE 2, and CUE TYPE 2 (alternating lights). These same values are shown in the Settings Window you see when you first open the SuperNova Interface Software. Remember that you can change any of the values to suit your needs and send the new values to the NovaDreamer through the Interface box, but you must turn the NovaDreamer to Mode 1 when you are ready to sleep to benefit from your changes.

"Reset Settings": Restoration of Default Settings

Choosing NovaDreamer > Reset Settings or clicking on the "Reset Settings" button can erase any changes you have made in the current settings window, reverting the settings back to the default cue settings. It does not change the settings of the Adjustable Sleep Mode (Mode 1) in the NovaDreamer unless you click on "Set NovaDreamer Settings" (after connecting the NovaDreamer to the Interface box and computer!) after restoring the default settings.

Sending Your Settings to the NovaDreamer

At the bottom of the Settings Window are two buttons. The first, "Set NovaDreamer Settings," is used to send the information you have entered in the Settings Window to the NovaDreamer to set its cue parameters. To set the NovaDreamer this way, you must connect the NovaDreamer via the Interface box (see "Connecting the NovaDreamer® to a Personal Computer" above). Then, after you have decided on and set all of the settings in the Settings Window the way you want, make sure that the NovaDreamer is connected to the SuperNova IB, and then click on the "Set NovaDreamer Settings" button (or choose NovaDreamer > Set NovaDreamer Settings). The NovaDreamer's LEDs should flash and the speaker should click softly indicating data transfer. When transfer is complete, you can disconnect the NovaDreamer from the Interface box and get ready for sleep.

Sleeping with a NovaDreamer Set with the Interface Software

General Procedure

Going to bed

You have already set the NovaDreamer as described in "Setting the NovaDreamer® with the Interface Software" above, and detached the NovaDreamer from the

Interface box. Make sure that the mask fits comfortably, with the LEDs and sensors directly in front of your eyes. The mask should be on tight enough not to slip, but should not cause discomfort. If you are not practiced with using the NovaDreamer, leave the dial set on "0" (Off) for a moment while you practice pressing the button beneath the moon icon while the mask is on your face.

Before going to sleep, turn the dial on the top of the NovaDreamer to your desired Sleep Mode (see "Selecting the Right Cue Settings and Sensitivity for You," and page 10, number 2, "Pick a sleep mode," of the NovaDreamer Operation Manual). When you first turn the dial to the Sleep Mode, the NovaDreamer will show the current cue setting or the preset setting for that Sleep Mode. To see the cue again and to set it in your mind, press and hold the mask button for one second, or briefly switch out of and back to the desired sleep mode. Try this with the mask on and your eyes closed, to simulate sleep. To practice performing a Reality Test, press the button and release immediately. You will see a quick flash and hear a chirp. If you were dreaming and did this on your dream version of the NovaDreamer, something would very likely go wrong-no flash, no beep, or something completely different would happen. When you are done practicing, turn the NovaDreamer dial back to "0". This will restore the values you have set for Initial Delay, which were altered by your practice button presses. Remember that each quick button press adds 10 minutes to the countdown time of the Initial Delay (so if you set the NovaDreamer via the Interface Software to have a delay of 100 minutes, a button press would add 10 minutes for a total delay of 110 minutes). Furthermore, holding the button for one second to demonstrate the cue also "zeros" the Initial Delay (no countdown time, the NovaDreamer immediately begins monitoring for eye movements and giving cues).

When ready to sleep, turn the dial to your desired Sleep Mode again. Lie back, relax, and go to sleep with your mind focused on your intention to have a lucid dream tonight, ready to recognize cues, and to perform Reality Test button presses every time you think you have awakened, no matter how sure you are!

Responding to Cues

Time passes, it's 4 AM, and it happens! You are dreaming when suddenly your vision is filled with a flashing light. Where did that come from? Laser guns of evil aliens? No, no, it's the NovaDreamer and you are dreaming! Now you are free to do as you wish with your lucid dream. But what if the cue wakes you up-that is, you think it wakes you up. The first thing to do is to press the mask button and release it quickly. If you do not see the correct flash and beep, don't think the NovaDreamer is broken, because chances are much greater that you have just had a "false awakening," a dream of awakening. False awakenings are especially likely to occur after you have

actually been awakened by the cue a few times already. Eventually, your mind gets a little used to the cue and manages to stay in REM sleep. However, because you have learned that a cue leads to awakening, you are likely at this point to dream that you wake up in bed. If you have any doubts that you are dreaming, take off the mask and do a complete Reality Test using a digital clock or written text (see Unit 1 of *A Course in Lucid Dreaming* for complete Reality Testing procedures).

Awakenings

Even if the cue has really awakened you, all is not lost. First of all, you will become more accustomed to the cues with time and begin to incorporate them into your dreams, or false awakenings, rather than waking up. Second, you can use the opportunity presented by an awakening from REM sleep to try for a "Wake Induced Lucid Dream" (WILD). When you wake from the middle of a dream, your brain is in a condition in which it is likely to reenter the REM state directly. You may be able, by concentrating on your desire to notice when a dream begins, to enter a dream with full awareness. See Unit 4 of *A Course in Lucid Dreaming* for techniques of inducing WILDs.

If you awaken during the night and want to get up to go to the bathroom or something, press the mask button a couple of times to start a delay. This will prevent the NovaDreamer from collecting "data" which is just noise from the mask picking up movements in the room. When you get back to bed, you can zero the delay by holding the button down for one second, and then reset a delay long enough for you to return to sleep. Remember, each button press adds ten minutes to the countdown, so if you want 30 minutes to get to sleep, press the button 3 times.

End of the Night

When you are finished sleeping, remove the mask and immediately turn it off (turn the dial to "0"). Take notes on the number of dreams you remember, how many lucid dreams you had, how many cues you remember seeing in dreams, how many cues awakened you, and the content of your dreams. You will use this information in your Personal Sleep Log.

WARNING: IF YOU TURN THE NOVADREAMER ON AFTER YOU TURN IT BACK TO 0 YOU WILL ERASE YOUR DATA FOR THAT NIGHT. DO NOT TURN THE NOVADREAMER MODE SWITCH FROM ZERO UNTIL YOU HAVE DOWNLOADED YOUR DATA!

Collecting Accurate Data with the NovaDreamer

If you want the data you accumulate in your Sleep Log using the SuperNova Interface Software to give you an accurate picture of your sleep patterns, you need to take some care in the way you collect the data. Here are some tips:

- Make sure your computer's clock is set to the correct time. You need to send settings to the ND at least once per week even if you don't change them.

- Use the Initial Delay and delay by button press as little as possible during sleep, because the NovaDreamer will not collect any data on your eye movements while the delay is active. Use the Cue Period feature (see "Cue Period" below) if you want to restrict cues to a certain time in your sleep period.

- Do use the button-press delay to prevent data collection while you are out of bed or not wearing the mask during your sleep period.

- Do NOT turn the mask off and on again during your sleep period (e.g. if going to the bathroom). If you do, you will lose all of the data collected in the time before you turned the mask off.

- Don't turn the mask on to collect data until you are ready to go to sleep, and turn the mask off immediately when you are done sleeping.

- Keep charged batteries in the NovaDreamer. Dead batteries or removal of the batteries will lead to erasure of both data and settings.

- Be sure to download your NovaDreamer data before 7 days have elapsed. The NovaDreamer cannot keep track of the date and time for longer than one week.

Cue Period

This feature allows you to select a certain time period for the NovaDreamer to give you cues. Research has shown that lucid dreaming efforts are most rewarding in the second half of a night's sleep, when most REM sleep occurs. Limiting cueing to the last 3 or 4 hours of sleep has several advantages. First, you will be less likely to habituate to the cue if you limit it to times when your mind is best prepared to respond to it. Habituation can cause you to sleep through the cue without dream incorporation or awakening. Second, since some eye movements may occur in non-REM sleep (although far fewer than in REM), use of the Cue Period will lessen awakenings that may lead to undue sleep disruption. Also, sensitivity to awakening by cues changes from early to later in the sleep cycle. After several weeks of collecting Sleep Log data with the NovaDreamer, you may be able to identify a time when you are most responsive to cues and most likely to have lucid dreams. Then you can use the Cue Period to set the NovaDreamer to give cues only during that most fruitful time, again avoiding habituation and excess sleep disturbance.

Downloading Data from the NovaDreamer to a Personal Computer

Getting Data and Settings from the NovaDreamer

You have slept with the NovaDreamer. Now you will download data on your sleep and the NovaDreamer's settings to your computer. Proceed as follows:

- Make sure that the NovaDreamer is turned off (Mode 0) and leave it off until you have downloaded your data.

- Connect the NovaDreamer to the SuperNova Interface (IB-ND) cable.

- Click on "Get NovaDreamer Settings and Data" or choose NovaDreamer > Get NovaDreamer Settings and Data. (During the process, the LEDs in the NovaDreamer will flash and the speaker will click indicating data transfer).

Entering Personal Dream Log Data

After a short delay the NovaDreamer data will appear in the Data Window. Now you will enter data on your dream recall, lucid dream success and cue experiences. The box labeled DREAMS should be highlighted (if it isn't move the cursor to that field). Type in the number of dreams you recall from the period of sleep you just recorded. Now move the cursor to LUCID DREAMS (use the Tab key), and enter the number of lucid dreams you remember having during the recorded sleep period. Repeat this process for RTLDs (the number of lucid dreams you had as a result of performing a reality test), QLDs (the number of lucid dreams you had as a result of recognizing a NovaDreamer cue), WILDs (the number of lucid dreams you had by directly entering the dream state from the waking state while remembering your intention to know when you are dreaming), DREAM CUES (the number of cues you remember seeing in dreams), and CUE AWAKENINGS, (the number of times you recall being awakened by a cue). If you forget what the abbreviations mean, refer to the HELP field in the Data Window.

You can use the COMMENTS text box to record dream reports; take notes on other things that might affect your lucid dreaming, such as practicing lucid dream induction techniques from *A Course in Lucid Dreaming*; drug or supplement intake; meditation; sleeping in a new place; change of sleep hours; illness; etc. You may also cut and paste to and from the COMMENTS text box.

Saving the NovaDreamer Data

The SuperNova Software is designed so that you can create an ongoing Personal Sleep Log with data from each time you sleep with the NovaDreamer stored in a single document. As data accumulates, you can review your progress, how different settings worked for you, and create a plot of the timing of your REM periods.

Creating a Personal NovaDreamer Sleep Log

After you have slept with the NovaDreamer and downloaded the data to your computer, you are ready to start a Sleep Log. First make sure the Data Window is selected (click the cursor over it if you are not sure), and name the Log by choosing File > Save As. Choose a name that will allow you to distinguish your Log from that of any other users with whom you are sharing the SuperNova software. PC owners note that your computer will automatically add the extension "ND1" to any file name. Make sure you enter all of the Personal Dream Log Data (see above) in the Data Window, so you can refer back later to evaluate your progress.

Adding to Your Sleep Data Log

For safety you should make a backup copy of your data file before adding new data. Before downloading the data from your second sleep session with the NovaDreamer to your computer, open the copy of the Log you created last time. You can do this on the Macintosh by double-clicking on the Log document to open the SuperNova Interface Software. In Windows 95, you must open files from the File menu of the application. If Macintosh users have already opened the SuperNova application and see the "Untitled" Data Window, they must close that window and open the Log document they saved last time choosing File > Open.

Once you have your Log open (you see a Data Window with the name of your Log), download the data from your NovaDreamer (as described under "Getting Data and Settings from the NovaDreamer®" above). When the data transfer is complete, the bottom right corner of the Data Window should say, "Record 2 out of 2".

Deleting Records from Your Sleep Data Log

If you want to delete a record of a sleep session, for instance, because it was poorly recorded, or not representative of your sleep, click on the "Delete" button at the bottom of the Data Window (or choose Windows > Delete Record...) when the record you wish to erase is displayed in the Data Window. The process for selecting previously stored records is described below under "Old Records."

Multiple Sleep Logs

You can keep several different Sleep Logs on your computer, for multiple users, or different sleep conditions, whatever you want. To create a new Sleep Log, download data from the NovaDreamer, make sure the Data Window is selected (click the cursor over it if you are not sure), then choose File > Save As and name the new Log appropriately. In the future to save a record to that Log, make sure it is open (the name of the Log is at the top of the Data Window) before downloading.

Creating and Using Settings Files

You can also save Settings Files, sets of cue, alarm, sensitivity, delay and Cue Period settings. Different users might have their own settings that they wish to store for rapid setting of their NovaDreamers, or you may want to have a different Settings File for nights and naps, or longer versus shorter nights of sleep, and so on.

To save a Settings File and give it an identifying name, make sure the Settings Window is selected (click the cursor over the window if you are not sure). Then choose File > Save As and name the Settings File appropriately. (PC users note that the PC will automatically add the extension "ND2" to your file name.)

For Macintosh users to open a particular Settings File, first close the Settings Window currently showing. Then choose File > Open to pick the Settings File you wish to use, or double click the appropriate file in the finder. PC users must open Settings Files from within the SuperNova application.

Interpreting the Data from the NovaDreamer (Data Window)

Selecting a Record to Interpret

Record Just Downloaded

When you download data from a sleep session with the NovaDreamer, the data from that record is displayed in the Data Window. The box in the bottom right corner of the Data Window will show the numerical sequence number of this record in the Sleep Log that is open.
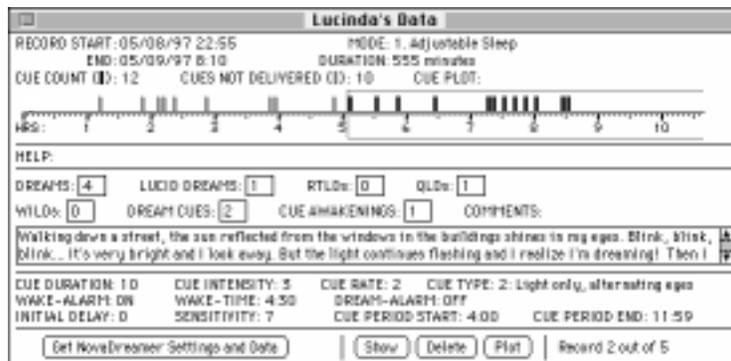
Old Records

You can review previously recorded sessions with the NovaDreamer (only if you have downloaded them to your computer, of course). First, make sure you have opened the Sleep Log containing the record. Then click on the "Show" button at the bottom of the Data Window (or choose Windows > Show Record...). A list of data records will appear, listed by sequence number, date, start time and duration of recording. Select the one you wish to view by clicking on it to highlight it. Then press Return (Mac) or Enter (W95). Or just double click on the record you want. The Data Window will now display the record you have just selected. Note that you can also browse through your records using the right-arrow key to go forward, and the left-arrow key to go back.

Interpreting the Cue Delivery Data

A. RECORD START: The date and time when the NovaDreamer was turned on (NovaDreamer dial turned to a Sleep Mode at the start of a sleep session).

B. RECORD END: The date and time when the NovaDreamer was turned off at the end of a sleep session (NovaDreamer dial turned to "0"). If this is longer than 10 hours and 40 minutes after the Record Start time, the Record End will equal the Record Start time plus 640 minutes.

c. MODE: What Sleep Mode the NovaDreamer was set to during the sleep session (see page 10, number 2, "Pick a sleep mode," of the NovaDreamer Operation Manual).

d. DURATION: The duration in minutes of the sleep session (truncated at 640).

e. CUE COUNT (▉): The number of cues that the NovaDreamer actually delivered from the time the mask was turned on until it was turned off. Remember that some of the cues may have happened while you were awake or while the mask was off your face.

f. CUES NOT DELIVERED (▌): The number of times that the NovaDreamer would have given cues during the time when the Cue Period was not active if the Cue Period had been active. This count is useful in assessing the sensitivity setting of the NovaDreamer, because when Cues Not Delivered is added to the Cue Count, the total is equal to the number of cues triggered in the sleep period.

See "Sensitivity" under "Selecting the Right Cue Settings and Sensitivity for You" above for advice on adjusting the sensitivity of the NovaDreamer based on results.

g. CUE PLOT: This refers to the bar graph displayed under the Sleep data fields. The graph is a timeline, labeled in hours (HRS) with the small markings denoting 5 minute intervals. Displayed above each five minute interval of the timeline will be one of the following three options:

- ( ): A blank space means that no cue was given in that 5 minute epoch, nor was a cue triggered but undelivered because of the Cue Period being inactive. That no cue was given may mean either that the NovaDreamer was on, but detected no eye movements during that 5 minute epoch, or that the Initial Delay or button press delay was counting down so the NovaDreamer was not monitoring for eye movements.

- (▌): A black bar above a 5 minute epoch indicates that a cue was actually delivered during that epoch. Because the refractory period between cues is 5 minutes (the NovaDreamer will not give cues closer together than 5 minutes), no more than one cue can occur per epoch.

- (▌): A grey bar above a 5 minute epoch indicates that a cue was triggered but not given because the Cue Period was not activated.

The time during which the Cue Period was active is represented on the Cue Plot by a lightly drawn box around the Cue Period "on" time. Cues given during the Cue Period will be shown as dark bars. Cues triggered but not given because of the Cue Period being inactive will be shown as grey bars.

If the recorded sleep session was 10 hours and 40 minutes or longer, the message "Cue plot full" will appear in a box at the end of the timeline. No data will be saved after 10 hours and 40 minutes (640 minutes) but the NovaDreamer will still continue to function.

Personal Dream Log Data

You must enter these numbers from your own notes taken during the night or at the end of your sleep period. Refer to "Entering Personal Dream Log Data," under "Downloading Data from the NovaDreamer® to a Personal Computer" above for a description of the fields and how to enter the information.

Cue Settings Data

These fields show the settings of the NovaDreamer during the sleep period displayed in the current record. Please note that you cannot alter these numbers. To change how the NovaDreamer works when you use it again, use the Settings Window. See "The Settings Window" under "The Screen Display Windows" above for guidance in setting the Nova Dreamer with the SuperNova Interface Software.

Plotting Data from Multiple Records

After you have collected several sleep sessions using the NovaDreamer, you can plot the data from all of the records simultaneously. This provides a picture of when the NovaDreamer has most frequently given you cues, which corresponds to the times when you are most likely to have REM sleep. Each person has a unique sleep cycle (although all humans have a roughly similar kind of cycle). By charting your own cycle with the "Plot" feature, you can identify the times when your lucid dreaming efforts are most likely to be rewarded. For example, if you plot records of 30 of your nights with the NovaDreamer and see that you always have a lot of REM sleep between 6 and 7 hours after sleep onset, you might decide to set the Cue Period to be active during this time and not during other times.

To use the Plot feature, click on the "Plot" button at the bottom of the Data Window. A list of all of the records in the currently open Sleep Log will appear. The presently open record will be outlined with a light box. To select records to plot, you must highlight each one that you wish to include in the plot. Select the first record by clicking on it. Select additional records by holding down the Command (Mac) or ALT (W95) key and clicking on them. Or you can select all the records by clicking in the "Select All" button on the bottom of the menu. (Note that the light outline around the record currently displayed in the Data Window does not mean this record is already selected to plot. You have to click on it so that it is highlighted to select it). When you are finished selecting records, press the Return (Mac) or Enter (W95) or click on the "OK" button.

A graph similar to the Cue Plot will appear. Like the Cue Plot, it is a timeline, with the horizontal axis marked off in hours and five minute epochs. To make the plot, the Software aligns all of the start times of the selected records at zero. Each five

Select one or more data records:

#1: 4/27/1997 3:21 460 minutes
#2: 5/8/1997 22:55 555 minutes
#3: 5/14/1997 22:57 415 minutes
#4: 5/16/1997 0:58 520 minutes
#5: 5/19/1997 23:11 315 minutes

Plot: Color:
☒ Cues   ⦿ Black   ○ Gray
☒ Cues ND   ○ Black   ⦿ Gray
☐ Combined   ⦿ Black   ○ Gray

[OK]   [Cancel]   [Select All]
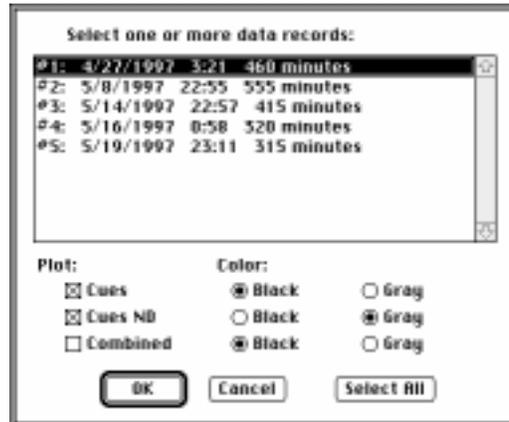
minute epoch therefore represents a certain amount of time after the arbitrary start time (the time you put on the mask and started to go to sleep). Above the timeline will be one or more step-like lines. The lines are drawn based on the cumulative cue counts for each five minute epoch. The vertical axis numbers represent cumulative cue counts. You may choose dark lines to indicate cues actually given and light lines to indicate cues triggered but not delivered because the Cue Period was inactive, or you can plot the combined cues. For example, if the dark line over the 6 hour mark is at 23, this means that in all of the records you have plotted, the NovaDreamer has given a total of 23 cues in the five minute epoch occurring 6 hours after the mask was turned on. If a line is at zero for any five minute epoch, this means that no cues were ever triggered (actual cues or aborted cues, depending on if it is the dark or light line) in any of the records summed at that particular time after the record start time. To find out the total number of cues given in all the summed records at any particular epoch time, plot the combined cues. Note that if you have only selected one record, you will get a plot identical to the Cue Plot in the Data Window, except with taller bars.

If you have enough records stored and selected to plot, and you collected your data carefully (see "Collecting Accurate Data with the NovaDreamer®" above), then the Plot will show periods of time when high numbers of cues were given and periods of low numbers of or no cues given. Times of high cue activity correspond to REM period times, and times of low cue activity correspond to non-REM sleep.

If your plot does not show any regular cycles of activity, there are several possible explanations. One is that your data collection procedure has not been optimal and you have a lot of waking eye movements and room activity recorded with your sleep data. Another is that you have mixed night records with nap records in the same plot; sleep cycles in naps differ somewhat from those in full nights of sleep. A third possibility is that your sleep has been erratic: you have not kept regular bedtimes and rising times, have had periods of sleep deprivation and then "catchup" long
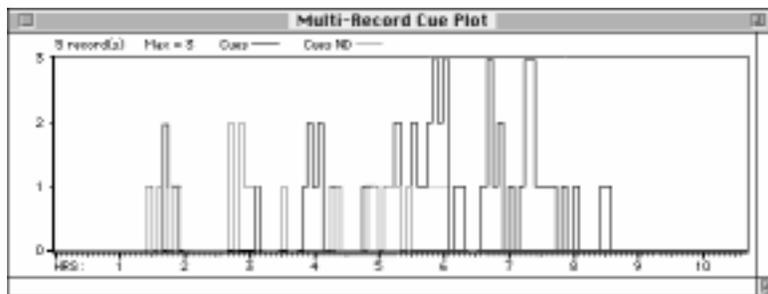
sleeps. Yet another is that on some nights you have used sleep altering drugs such as alcohol, marijuana, stimulants (including caffeine), or sleeping pills (even drugs taken hours before bedtime can sometimes affect your sleep). To correct the problem and get a neat plot, try identifying similar sleep sessions (times when you went to bed at the same time and slept the same length of time, in the same bed and with either no sleep altering drugs or the same ones each time). The menu of records obtained by clicking the "Plot" button helps you find similar records by listing start times and durations.

Re-evaluating Your Settings Based on Results

After each time you sleep with the NovaDreamer you should assess your results and think about whether or not your cue settings are optimal. For example, if you saw no cues last night, you need to look at sensitivity (did the NovaDreamer give you enough cues?), cue intensity, cue type, Cue Period time, and Initial Delay (the last two items, if set incorrectly for you, can result in too few cues even if the Sensitivity is high enough). For more guidance in evaluating and choosing new cue settings, see page 11 of the *NovaDreamer Operation Manual*, numbers 9 through 12.

After becoming experienced with the NovaDreamer, you might wish to create a truly customized cue: your own voice saying, "This is a dream!" or a particular musical phrase. The Lucidity Institute offers a peripheral device for the NovaDreamer called the DreamSpeaker™, with which you can digitally record any sound cue you wish and have the NovaDreamer trigger it instead of or along with the regular cues. The NovaDreamer can also be used to trigger anything electronic you can develop as a cueing device using voltage output from the jack on the NovaDreamer. If you are interested in developing such a device, contact the Lucidity Institute.

Printing from the SuperNova Interface Software

If you want to print any window of the SuperNova Interface Software, just select the window (click the cursor on it), and choose File > Print Window.... Only the window that is selected will be printed.

Exporting Data from the SuperNova Interface Software

You can export your data from the SuperNova Interface Software in text (ASCII) format. Then you can import the data text file into a database or format it in a word processor for printing. To export all records, select File > Export to Database.... The database format writes labeled fields of tab-delimited data. If you understand what this means you can probably do something with the database format.

You can also export a single record in text file format by selecting File > Export Report.... Report format is essentially a text-only version of the data window. This

is the format you should use for emailing in your records to technical support (support@lucidity.com). The following is a sample exported report:

Sample Report

```
RECORD START: 05/08/97 22:55   MODE: 1. Adjustable Sleep
END: 05/09/97 8:10   DURATION: 555 minutes
CUE COUNT: 12   CUES NOT DELIVERED: 10   CUE PLOT:
..............|.......|..||.|.....|...........|||.........|..|....|...|......|......
HRS:........1...........2...........3...........4...........5[..........6...........
...||.|.|.|.|....||........................
7..........8...........9...........10......
--------------------------------------------------------------------------------
DREAMS: 4   LUCID DREAMS: 1   RTLDs: 0   QLDs: 1
WILDs: 0   DREAM CUES: 2   CUE AWAKENINGS: 1   COMMENTS:
Walking down a street, the sun reflected from the windows in the buildings shines in
my eyes. Blink, blink, blink... It's very bright and I look away. But the light
continues flashing and I realize I'm dreaming! Then I jump into the air and fly
heavenward. Everything is wonderfully clear and beautiful. I awaken exhilarated.
--------------------------------------------------------------------------------
CUE DURATION: 10   CUE INTENSITY: 3   CUE RATE: 2
CUE TYPE: 2: Light only, alternating eyes
WAKE-ALARM: ON   WAKE-TIME: 4:30   DREAM-ALARM: OFF
INITIAL DELAY: 0   SENSITIVITY: 7   CUE PERIOD START: 4:00   CUE PERIOD END: 11:59
--------------------------------------------------------------------------------
Packet version: 1
Nova software version: 0x3030
IB software version: A4.00
Mac software version: Mac V1.00
Nova TOD clock: 1 14 57 58
Nova delays pressed: 3
```

Software Updates

Check the Lucidity Institute web site for the latest software news and revisions (http://www.lucidity.com). We welcome comments and suggestions from users; please send them to supernova@lucidity.com.