

Low Light Signal Detection and Intrinsic Noise Measurements

September 2008

Student's Name _____

Partner's Name _____

Pre-lab Discussion Questions and Staff SignOff**Watch the Video for this experiment first.**

It is your responsibility to discuss this lab with a professor or GSI on the first day of your scheduled laboratory period. This signed sheet must be included as the first page of your report. Without it you will lose 1/3 of a letter grade. You should think about and be prepared to discuss at least the following before you come to lab:

1. What is the purpose of having the SR760 FFT Spectrum Analyzer?
2. What mathematical operation does it perform on an input signal?
3. Give several examples of what goes in and what comes out.
4. Why don't we just put a filter in front of our photodiode which only passes light at the frequency given off by the LED (e.g. 635 nm)?
5. Explain how chopping the steady-state signal from the LED helps you to recover the signal from the LED.

Staff Signature _____ Date _____

Completed on the *first* day of lab? (circle) Yes / No**Mid-lab Questions and SignOff**

1. Before beginning EXPERIMENT X, you should have produced a plot of the Johnson noise signal, like the in Experiment IX.

Staff Signature _____ Date _____

Completed on the *before* proceeding with EXPERIMENT X? (circle) Yes / No**INCLUDE THESE SHEETS AS THE FIRST PAGES OF YOUR REPORT**

<i>Physics 111 Advanced Lab</i>	<i>Student Evaluation of Experiment</i>
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Now that you have completed this experiment, we would appreciate your comments. Please take a few moments to answer the questions below, and feel free to add any other comments. Since you have just finished the experiment it is *your* critique that will be the most helpful. Your thoughts and suggestions will help to change the lab and improve the experiments. Please be as specific as possible, using both sides of the paper as needed, and turn this in with your report. Thank you!

Experiment name: _____ Date: _____

How was the write-up for this experiment? How could it be improved?

How easily did you get started with the experiment? What sources of information were most/least helpful in getting started? Were the reprints appropriate? Did the Pre-lab discussion help? Did you need to go outside the course materials for assistance? What additional materials could you have used?

What did you like and/or dislike about the experiment?

Would you recommend this lab to fellow student? Why or why not?

What advice would you give to a friend just starting this experiment?

If the course materials were available over the Internet (WWW, FTP, etc.), would you (a) have access to them and (b) would you prefer to get them this way?

Please circle the abbreviations of the other labs you have completed:	Overall quality of this experiment?										
ATM BMC BRA COM CO ₂ GMA HAL HOL JOS LIF LLS MNO MOT MUO NLD NMR OPT OTZ RUT SHE XRA	<table style="margin: auto;"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> </tr> <tr> <td colspan="2">Poor</td> <td colspan="2">Average</td> <td>Good</td> </tr> </table>	1	2	3	4	5	Poor		Average		Good
1	2	3	4	5							
Poor		Average		Good							