Jefferson Lab
Thomas Jefferson National Accelerator Facility

Jefferson Lab PAC 43
Proposal Cover Sheet

Experimental Hall:
Days Requested for Approval:

This document must be received by close of business Monday, May 18, 2015 at:

Jefferson Lab
Mail Stop 12B
12000 Jefferson Ave.
Newport News, Va
23606

Proposal Title:

Timelike Compton Scattering on the transversely polarized proton at 11 GeV

Proposal Physics Goals:
Indicate any Experiments that have physics goals similar to those in your proposal.

Approved Conditionally approved, and/or Deferred Experiment(s) or proposals.

Collaboration-Approved Proposals:
If you will be running in parallel with an approved experiment, please indicate the experiment number.

Key Experimental Parameters

List Beam Energies and Beam Days: (e.g. 30 Days at 11 GeV, 20 Days at 8 GeV)
30 Days at 11 GeV

List Range of Beam Currents: (e.g. 10-60 mA)
100-200 nA

Indicate Major Apparatus: (e.g. CLAS12 & RICH, GLUEX, SHMS, HMS, SBS, SOLID)

Contact person:

Name : Arthur Mkrtchyan
Institution : CUA

Spokespersons:

1. A. Mkrtchyan
2. V. Tadevosyan
3. P. Nadel-Turonski

Address :	Washington, D.C. 20064
Address :	
City, State, ZIP/Country :	20064/USA
Phone :	757 269 6928
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4. M. Boer
5.
6.
7.
8.

Contact person:

Recipient Date :	5/18/2015
By :	

LAB RESOURCES LIST

Jlab Proposal No. :

Date

List below significant resources - both in equipment and human - that you are requesting from Jefferson Lab in support of mounting and executing the proposed experiment. Do not include item that will be routinely supplied to all running experiments such as the base equipment for the hall and technical support for routine operation, installation, and maintenance.

Major Installations (either your equip. or new equip requested from JLab)

Pair of Electromagnetic Calorimeters

New Support Structures

Stand for EM calorimeters

Data Acquisition/ Reduction

New Support Structures

Hall C DAQ

New Software

Major Equipment

Magnets :

Power Supplies:

Targets:

UVA polarized target

Detectors:

Pair of EM calorimeters and Recoil Proton detectors

Electronics:

Hall C electronics

Computer Hardware:

Other:

Other:

BEAM REQUIREMENTS LIST

Jlab Proposal No. :		**Date :**	
Hall: A/C	**Anticipated Run Date**		**PAC Approved Days:**
Spokesperson:	Arthur Mkrtchyan	**Phone:**	757 269 6928
Email:	mkrtchya@jlab.org	**Hall Liaison:**	

List all combinations of anticipated targets and beam considerations required to execute the experiment. (This list will form the primary basis for the Radiation Safety Assessment Document (RSAD) calculations that must be performed for each experiment.)

Condition No.	Beam Energy (MeV)	Mean Beam Current (μA)	Polarization and Other Special Requirements (e.g. time structure)	Target Material (use multiple rows for complex targets - e.g. w/windows)	Material Thickness (mg/cm^2)	Est. Beam-On Time for cond. No. (hours)
1	11000	0.1	polarized	polarized NH3	~2000	650
2	11000	0.1	polarized	solid C	~1000	50

The beam energies, E_{Beam}, available are: $E_{Beam} = N \times E_{Linac}$ where N = 1, 2, 3, 4, or 5. E_{Linac} = 800 MeV, i.e, available E_{Beam} are 800, 1600, 2400, 3200 and 4000 MeV. Other energies should be arranged with the hall leader before listing.

HAZARD IDENTIFICATION CHECKLIST

Jlab Proposal No. : **Date :**

Check all items for which there is an anticipated need.

Cryogenics
- beamline magnets
- analysis magnets
- target magnets
  - type:
  - flow rate:
  - capacity:

Electrical Equipment
- cryo/electrical devices
- capacitor banks
- high voltage
- exposed equipment

Radioactive/Hazardous Materials
List any radioactive or hazardous/toxic materials planned for use:

Pressure Vessels
- inside diameter
- operating pressure
- window material
- window thickness

Flammable Gas or Liquids
- type:
- flow rate:
- capacity:

Drift Containers
- type:
- flow rate:
- capacity:

Other Target Materials
- Beryllium (Be)
- Lithium (Li)
- Mercury (Hg)
- Lead (Pb)
- Tungsten (W)
- Uranium (U)
- *Helium (^{3}He)
- Other (List below)

Special Target Materials
- *Helium (^{3}He)
- Deuterium

Vacuum Vessels
- inside diameter
- operating pressure
- window material
- window thickness

Radioactive Sources
- permanent installation
- temporary use
- type:
- strength:

Large Mech. Structure/System
- lisfting devices
- motion controllers
- scaffolding or
- elevated platforms

Lasers
- type:

Hazardous Materials
- cyanide plating

General

Experiment Class

wattage: class: Installation: ☐ permanent ☐ temporary Use: ☐ calibration ☐ alignment	materials ☐ scintillation oil (from) ☐ PCB's ☐ methane ☐ TMAE ☐ TEA ☐ photographic developers ☐ other (list below)	☐ Base Equipment ☐ Temp. Mod. to Base Equip. ☐ Permanent Mod to Base Equipment ☐ Major New Apparatus Other:

Data:

Proposal Title: Timelike Compton Scattering on the transversely polarized proton at 11 GeV

Spokesperson: Arthur Mkrtchyan **Experimental Hall:**

Raw Data Expected

Silo/Mass Storage (Tape): 1

Amount of Simulated Data Expected (TB): 1

Amount of Raw Data Expected (TB) 1

Amount of Processed Data Expected: 1

Online Storage (Disk) Required (TB): 1

Imported Data Expected from Offsite Institutions:0

Exported Data Expected to Offsite Locations: 1

Computing:

Simulation Requirements (SPEC CINT2000 hrs): 200

Production (Replay, Analysis, Cooking) Requirements (SPEC CINT2000 hrs):

Other Requirements
Please add any additional information that will be useful for JLab's Information Technology group regarding unique configurations or that may require additional resources and/or coordination. Please indicate if possible what fraction of these resources will be provided by collaborating institutions and how much is expected to be provided by JLab.
