

Abstract Submitted  
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**<sup>30,31</sup>S level structure measured via  $(p, t)$  and  $(p, d)$  reactions on <sup>32</sup>S**  
D.W. BARDAYAN<sup>1</sup>, J.C. BLACKMON, W.R. HIX, J.F. LIANG, L.F. ROBERTS,  
M.S. SMITH, ORNL, Z. MA, U. Tenn., R.L. KOZUB, Tenn. Tech. U., K.L. JONES,  
J.S. THOMAS, Rutgers, R.J. LIVESAY, Col. School of Mines, R.P. FITZGERALD,  
D.W. VISSER, U. North Carolina — An accurate knowledge of the level structure  
of <sup>30,31</sup>S above the proton threshold is important for calculating the astrophysical  
rates of proton capture on <sup>29,30</sup>P respectively. These proton captures affect the Si  
abundances observed in meteoritic presolar grains and the reaction flow to heavier  
nuclei in novae. We have studied <sup>30,31</sup>S by bombarding ZnS targets with ~40-  
MeV proton beams from the Holifield Radioactive Ion Beam Facility and detecting  
reaction tritons and deuterons in the Silicon Detector Array (SIDAR). A total of  
13(26) states were observed in <sup>30</sup>S(<sup>31</sup>S) including 9(17) above the proton threshold.  
The spins of strongly-populated levels were constrained through a DWBA analysis  
of the measured angular distributions. The method and results will be presented.

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D.W. Bardayan  
ORNL

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