1125-05-1615　　　　　**Anders S. Buch*** (`asbuch@math.rutgers.edu`). *Puzzles for 3-step flag varieties.* Preliminary
　　　　　　　　　　report.

A conjecture of Knutson from 1999 states that the cohomological Schubert structure constants of all partial flag varieties of Lie type A can be expressed as the number of puzzles that can be created from a list of puzzle pieces. This conjecture has been proved for Grassmannians and 2-step flag varieties, but is incorrect for 3-step flag varieties and beyond. However, in the case of 3-step flag varieties one obtains a formula that withstands computer testing by adding four extra puzzle pieces to Knutson's list. I will speak about partial progress towards proving this conjecture. (Received September 18, 2016)