

$$N = 93 = 3 \cdot 31$$

By the Ibukiyama-Kitayama dimension formula,
 $\dim(S_4(K(93))) = 25$

By the Skoruppa-Zagier dimension formula and Jacobi restriction,
the lift dimension of $S_4(K(93))^+$ is 16
the nonlift dimension of $S_4(K(93))^+$ is heuristically 8
 $\dim(S_4(K(93))^+)$ thus is heuristically 24
 $\dim(S_4(K(93))^-)$ is heuristically 1

The heuristic dimensions are correct by the spanning results to follow

$\dim(J_{\{2,93\}}^{\{\text{cusp}\}}) = 2$ (Skoruppa-Zagier), so need to span to within 1 dimension

$q = 5$ for TraceDown

After TD($\text{Grit}(J_{\{4,465\}}^{\{\text{cusp}\}})$) and $(\text{Grit}(J_{\{2,93\}}^{\{\text{cusp}\}}))^2$,
spanned rank in $S_4(K(93))^+$ is 24
spanned rank in $S_4(K(93))^-$ is 0

Hecke operators applied: $\{\{3, 2\}\}$

After Hecke spreading,
spanned rank in $S_4(K(93))^-$ is 1

Final spanned rank in $S_4(K(93))^+$ is 24

Final spanned rank in $S_4(K(93))^-$ is 1

$S_2(K(93))$ is determined by Jacobi restriction and the $H4Ndd(2,+)$ test
 $(H_4(93,2,2))^+ = 0$

So $S_2(K(93)) = \text{Grit}(J_{\{2,93\}}^{\{\text{cusp}\}})$ (dimension 2)