

; GA!Gi ddcfh'i `"'8cVfY[c'DUghYfnU'%\$&#) ž' %! (%\* '?fU\_Œk a cV]`Y'Ž(, '\*\$, %\$+()) ž'B=D', %' ''), \*\$- 'F9; CB.'%, %\$, %' '( k k k "[ga!gi ddcfh'bYh

## DUfUVYb 8 UhU F YWcj Yfm Gh]W





H\Y'8UhU'FYWejYfm'Gh]W\_']g'h\Y'YUg]Ygh'k Um'Zcf'UbmcbY hc'fYWejYf'XY'YhYX'Z]Yg"'H\YfYftg'bc'gcZhk UfY'hc'Xck b'cUX'UbX']bghU`"
G]a d'm'd'i ['h\Y'8UhU'FYWejYfm'Gh]W\_']bhc'U'I G6'dcfhe'cdYb'h\Y'gcZhk UfYz'UbX'ghUfh'mci f'fYWejYfm''9jYb']Z'Z]Yg'\UjY'VYYb
XY'YhYX'Zfca 'h\Y'fYWhWY'V]bz'mci 'WUb'gh]``fYWejYf'h\Ya 'Ug'`cb['Ug'h\Ym\UjYbfh'VYYb'cjYfkf]hhYb'Vm'bYk 'XUhU''FYWejYf]b[
XY'YhYX'XUhU'XcYgbfh'\UjY'hc'VY'cjYfk\Ya ]b["'6Ygh'cZ'U``z'mci 'WUb'fYgh'YUgm'\_bck]b['DUfUVYbftj'mYUfg'cZ'X][]hU`'ZcfYbg]W
YI dYfh]gY'k]``fYWejYf'mci f'Z]Yg"

 $\label{eq:hamiltonian} $$H\Y^8UhU^FYWej\Yfm^Gh^jW_Wb^Vcch^YX^jb^ZcfYbg^jWa\ cXY''K\Yb^U^I\ G6^Xf^jj\ Y^jg^d^i\ [\ [\ YX^jbhc^Ub^UWh^jj\ Y^K\ ]b^Xck\ g^gmghYa\ z^jh^WYUhYg\ U^fY[\ ]ghfm^Ybhfm'K\ Yb^mci ^Vcch^jbhc^h\ Y^8UhU^FYWej\ Yfm^Gh^jW_^jb^ZcfYbg^jWa\ cXYz^jh^k\ ]^*bch^YUj\ Y^U^hfUWY^cb^h\ Y^hUf[\ Yh^UfX\ Xf^jj\ Y^gc^h\ ]g^hcc^Wb^VY^i\ gYX^Vm^ca\ Y^i\ gYfg^cf^Wa\ di\ hYf^ZcfYbg^jWYI\ dYfhg''$ 

D`YUgY`BchY. 'H\Y`ghcfU[Y`XYj]\W`mci `UfY`fY\&jYf]b[`XUhU`Zfca `a i gh`VY`U`d\mg]\W``Xf]jY"`Gca Y`\Wa YfUgž`gi \\`U\g`]D\cbY\\Wa YfUgž`cb`m[]jY``c[]\\\`Xf]jY`U\\\Y`gg`UbX`]a U[Yg`\\Ubbch`VY`fY\&jYfYX`Zfca `gi \\\`XYj]\\Y`g"`\\ci `a i gh`U`gc`\UjY`h\Y`dfcdYfa YX]U`fYUXYf`Zcf`gca Y`hmdYg`cZ`ghcfU[Y"

DfcXi Wh'Cj Yfj ]Yk

H\Y`8UhU`FYWejYfm`Gh]\W\_`]g`igYX`Vm`Uk`YbZcfWYaYbh`U```UfcibX`h\Y`kcf`X`hc`ZcfYbg]\W``mfYWejYf`XY`YhYX`XUhU"`=h`igYg`U WighYf!VmlWighYf`ZcfYbg]\W[fUXY`XUhU`fYWejYfmU`[cf]h\a`gc`mci`\Wb`VY`gifY`]Zh\Y`XUhU`]g`gh]```h\YfYž`mcifî`[Yh`]h`VU\W\_"`H\Y 8UhU`FYWejYfmGh]\W\_`\Wb`fYWejYf`h\Y`Zc``ck]b[`hmdYg`cZXUhU.

D\chcg.

- "">D; "fl>D9; Ł"8 UhU F YWtj Yfm
- "6A D'fl6=HA 5DŁ'8 UhU'F YWtj Yfm
- ""DB; '8 UhU F YW¢j Yfm
- "H=: 8 UhU FYWcj Yfm
- "9A: 8UhUFYWtjYfm

AG'CZZJWY'8cWa Ybhg.

- "8C7"! K cfX'8 UhU F YWtj Yfm
- "8C7L"!"K cfX"&\$\$+"8UhU"FYWcjYfm
- "L@G"! '9I WY` '8 UhU F YWcj Yfm
- '"L@GL'!'9I WY`'&\$\$+'8UhU'FYWcj Yfm
- "DDH"! Dck Yf Dc]bh'8 UhU F YWtj Yfm
- "DI 6"! Di V`]g\Yf 8 UhU FYWtj Yfm

SUPPORT

## SUPPOR

CdYb CZZJWY 8cW a Ybhg.

- 'CdYb8cW'a Ybh'GdfYUXg\YYh'8UhU'FYWtjYfm
- CdYb8cWa Ybh'HYI h'8UhU'FYWcj Yfm
- 'CdYb'CZZ]WY'CdYb8cWa Ybh'DfYgYbhUh]cb'8UhU'FYWtjYfm
- 'CdYb8cWa Ybh'; fUd\]Wg'8UhU'FYWtj Yfm
- 'CdYb8cWa Ybh'8UhUVUgY'8UhU'FYWcj Yfm

Ch\Yf'8cWa Ybhg.



- '"FH: '! 'F]W\ 'HYI h': cfa Uh'8UhÛ FYWtj Yfm
- '5i hc7UX'8UhU'FYWcjYfm
- 'A ]bXA UbU[ Yf'6fU]bghcfa 'UbX'DfcWfgg'7cbhfc`'8UhU'F YWcj Yfm
- "7 < A '! ' < Y`d': ]`Y'8 UhU'F YW¢j Yfm
- '"< HA @'! 'K YV'DU[Y'8 UhU'FYWtjYfm

A i `h]! A YX]U.

• '"A D' '! 'A D9; '8 UhU F YWcj Yfm



- '<UfX'8f]j Yg
- 'I G6'8f]j Yg'f[ZUg\'Xf]j Yg#h\i a V'Xf]j Yg#Yh\\\"L
- $^{8}[]hU``^7Ua YfUg^fa i gh^g\ck ^Ug^U^d\mg]WU`^Xf]j YŁ$
- 'G8'fGYW'fY'8][]hU`'7UfXŁ
- 18!D]WifY.7UfX
- 'A]b]G8
- 'a ]WfcG8
- 'A Ya cfmGh]W\_'fA GŁ
- 'A i `h]A YX]U7UfX fA A 7Ł
- 'A A 7a cV]'Y
- 'A A 7d`i g
- FYXi WYX G]nY A i `h]A YX]U7UfX fF G! A A 7Ł
- a ]b]G8 < 7</li>
- a ]WfcG8<7
- 'A A 7a ]₩c
- '7ca dUWh `Ug\ 'fl7: Ł'HmdY'='UbX'=
- A ]Wfc8f]j Y
- 'A Ya cfm'Gh]W\_'Dfc
- 'A Ya cfm'Gh]W\_'8i c
- 'A Ya cfm'Gh]W\_'Dfc'8i c
- 'A Ya cfmGh]W\_'A ]Wfc'fA &Ł
- 'A U[]W UhY A Ya cfmGh]W\_
- 'A U[ ]W UhY'A Ya cfmGh]W\_8i c

GmghYa 'F Yei ]fYa Ybhg.

- K cf\_g'cb'Ubm'ghcfU[Y'a YX]U'Zcfa UhhYX'Ug': 5H'cf'BH: G
- 'GmghYa '7ca dUh]V]`]hm 'K ]bXck g'L Dž'K ]bXck g'+ž'cf'K ]bXck g',
- 7ca dUh]V`Y`A YX]U`F YUXYf

DfcXi Wh'Uj U]`UV`Y'cb 'gdYV]U\`cfXYf'UZhYf'dUma Ybh"DfcWrgg]b[ 'h]a Y']g'WU'%( 'XUmg'U[ fYYX ]bX]j ]Xi U`m